CEMP

ENVIRONMENTAL POLICY ISSUES AFFECTING THE UNITED STATES ARMY IN ITS OVERSEAS ACTIVITIES

CENTRE FOR ENVIRONMENTAL MANAGEMENT AND PLANNING

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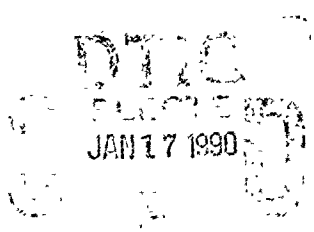

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1. INTRODUCTION

This document reports the findings of a meeting held between the Centre for Environmental Management and Planning (CEMP) and representatives of the United States Army. The report identifies issues of relevance, summarises the ensuing discussion, and identifies research and training needs of the US Army overseas. The background to the meeting is presented in Section 2, whilst the meeting itself is summarised in Section 3. A summary of the issues arising from discussions comprises Section 4, and includes recommendations for action. A number of supporting appendices are included at the end of the report.

This meeting was supported by the European Research Office of the United States Army.

2. BACKGROUND

The National Environmental Policy Act (NEPA), passed in 1969 by the United States of America, has been applied to the activities of the United States Army at home, particularly with regard to the assessment of environmental impacts which may arise from its various projects. Other nations have followed suit in developing environmental assessment policies, frameworks and legislation. In 1985, the Council of Ministers of the European Economic Community (EEC) approved Council Directive 85/337/EEC on "The assessment of the effects of certain public and private projects on the environment". The Directive, which became law in July 1988, remains to be legally implemented in a number of states through national or regional legislation or regulation. Details of legislation differ from country to country. At the time of writing, only the United Kingdom, France and Holland have passed laws and regulations which require the incorporation of environmental assessment into planning and decision-making. West Germany is still engaged in the process of legislative development.

Given these developments in the regulatory environment, the US Army is now turning its attention to the effects that these changes may exert on its activities overseas. As a result, the Centre for Environmental Management and Planning (CEMP) at the University of Aberdeen was asked to arrange a meeting to be attended by representatives of CEMP and representatives of the US Army.

The purpose of the meeting was to address key environmental policy issues confronting the US Army in its overseas activities in the context of recent changes in regulatory requirements in Europe and the growing political and public concern about environmental issues generally. (SDW)

The meeting was held from 18-21 September 1989 at the University of Aberdee. Those present included:

- Brian Clark, Executive Director CEMP (chair);
- Ray Clark, Office of the Assistant Secretary to the US Army for Installations, Logistics and Environment;
- Jerry Comati, Environmental Sciences Branch, United States Army Research, Development and Standardization Group (UK);

- John Fittipaldi, Environmental Division, United States Army Construction Engineering Research Laboratory (USACERL);
- Phil Huber, USAREUR; and
- Amanda Chisholm, CEMP.

The programme initially proposed and supporting documentation is presented in Appendix I.

3. DISCUSSION SUMMARY

The meeting comprised discussions between CEMP and US Army representatives on :

- NEPA and proposed amendments, particularly HR1113;
- EEC environmental policy and Directive 85/337/EEC;
- implementation of Directive 85/337/EEC by member states;
- environmental trends in Europe;
- activities and responsibilities of the US Army overseas; and
- research and training needs of the US Army overseas.

The meeting also considered training requirements for US Army and local personnel in key European countries to help the US Army implement sound environmental assessment specifically and environmental management generally. The US Army Construction Laboratory, sponsored by USAREUR, is developing a database of environmental sources to assist USAREUR environmental coordinators in performing environmental analysis, and this was also the subject of discussion.

The discussion began with a brief history of CEMP, followed by a discussion on the US Army's experience in West Germany (FRG). This was followed by presentations and discussion on NEPA, the EEC Directive and environmental trends in Europe. Finally, the issues of auditing, baseline data and training requirements were addressed. A summary of the discussion follows below.

3.1 History of CEMP

In the early 1970s, the discovery of oil in the North Sea led to concerns about possible ramifications on the environment being voiced to central government. In consequence, the Project Appraisal for Development Control (PADC) Unit was established in 1972 at the University of Aberdeen. Set up as a research organisation, PADC was asked by central government to investigate ways of managing the growth of the oil and gas industry in Scotland. Subsequently this was extended to include the environmental assessment of all major projects with the support of the Secretary of State for the Environment in England and Wales. The result was the publication of a manual by HMSO, *The Assessment of Major Development Proposals*, aimed at assisting planning authorities and developers to assess the environmental impacts of major projects and provide guidance in the preparation of environmental impact reports.

The activities of the unit increased and diversified through the 1970s; in 1983 it was decided to form a limited company to provide a commercial footing for the unit, as

the Centre for Environmental Management and Planning (CEMP). In 1987 CEMP became a trading division of Aberdeen University Research and Industrial Services Ltd (AURIS), and in 1989, the core of the new Environmental Division of AURIS.

Since 1972 CEMP has undertaken environmental assessments for industry and reviewed environmental statements for government and non-governmental organisations both in the UK and abroad. It has also run training programmes for professional scientists, engineers and planners on the methods and issues of environmental impact assessment and environmental management including risk assessment (Appendix II). CEMP has developed as a focal point for environmental impact assessment, not only for the Scottish oil and gas industry, but also in the United Kingdom and abroad. Its research activities during the 1970s saw CEMP gaining a reputation as a definitive centre of expertise in matters concerning the policy, procedural, methodological and technical aspects of environmental assessment and it is consulted regularly by government and industry. Its international reputation as a centre of expertise has developed out of its widely published research at a time when environmental planning and management was an emerging political issue, and as a result of the dissemination of its experience at international training courses held both in Aberdeen and around the world. Further information about CEMP is included in Appendix V.

3.2 NEPA and Environmental Impact Assessment

There is no strict definition of environmental impact assessment, but basically it is a tool for identifying and evaluating the impacts a project or policy may have on the environment, and identifying ways of avoiding, minimising or mitigating negative effects. Environment in this case includes not only the natural and physical environment but the human social and cultural environment. Environmental assessment is many things to many people: a planning tool, a scientific activity, and a political process, but it can, in fact, be all of these.

Environmental impact assessment was first introduced into project planning in the United States in 1969, through its inclusion in the National Environmental Policy Act (NEPA) (Appendix III). The purpose of NEPA was:

- to declare a national policy which will encourage productive and enjoyable harmony between man and his environment;
- to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man;
- to enrich the understanding of the ecological systems and natural resources important to the Nation; and
- to establish a Council on Environmental Quality.

Thus NEPA declares national environmental policy, through which it establishes a set of environmental goals for the nation. The Act also sets out measures by which these may be achieved, of which the most important to date has been the requirement of federal agencies embodied in Section 102. Section 102 requires federal agencies to consider significant environmental effects when planning projects or proposing legislation, and to show that they have done so by including an environmental impact statement in their proposals. The Act establishes five criteria which must be met in the statement:

- the environmental impact of the proposed action;
- any adverse environmental effects which cannot be avoided should the proposal be implemented;
- alternatives to the proposed action;
- the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
- any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

The agency in question is also required to make the impact statement available for review by other federal agencies, state and local government, and members of the public.

NEPA applies to all actions where there is federal involvement and this includes the military. In consequence, the US Army, particularly the Corps of Engineers, has been involved in environmental impact assessment for the last two decades. Its activities fall into the spheres of both civil (e.g. dam construction) and military (e.g. engineering support) projects. Its activities overseas are limited to support of the military.

3.2.1 Application of NEPA Overseas

There has been much debate over the years regarding the extent to which NEPA may be applied abroad. Despite Executive Order 12114 of 1979, which was intended to clarify this position, debate has continued, and there have been several calls for NEPA's mandate to include the actions of federal agencies overseas. This pressure has recently been increased by the introduction to Congress of specific proposals (HR1113) to amend NEPA to include overseas activities.

The issue of extending NEPA's mandate arises from questioning what responsibility the United States should take when its actions have environmental impacts on other nations. Several issues were identified in the course of discussion.

Firstly, NEPA was developed for use in the American political system, using principles of Jeffersonian democracy. The adherence to the principle of open government, with the people controlling the government rather than the government controlling the people, is embodied in the requirement for public review in Section 102. Indeed, it is partially through public intervention that the NEPA process has been defined and has evolved to its present form. It is questionable, therefore, how appropriate it may be apply the NEPA process to foreign nations, because of the different cultural and political context in which it would be used.

Secondly, the application of the NEPA process outside the United States raises issues of jurisdiction and sovereignty. The difficulty in applying a process developed for use in the US to activities or projects in other countries is that it may clash with the host country's legal system. Public review, for example, is not acceptable in some countries.

Clearly there is a desire in some quarters to apply the principles of NEPA to overseas actions, but is it appropriate to use the process established in the Act to do so?

3.3 EEC Environmental Policy

Environmental policy in the European Community is a combination of a broad conceptual framework and a set of legislative instruments which work within it. The environmental policy of the Community can really only signal intentions, since implementation of policy depends on the action of individual member states.

There are various institutions involved in the development of policy and legislation in the European Community. These are:

- the European Parliament;
- the Commission;
- the Council;
- the Court of Justice; and
- the Economic and Social Committee.

The Commission, composed of individuals appointed by national governments, is able to propose legislation. Generally speaking, however, legislation can only be adopted by the Council, which consists of one Minister from each member state. The role of Parliament is to give its opinion on any proposed legislation before it is adopted, and the Court of Justice has its role in interpreting legislation through the hearing of cases. The Economic and Social Committee also expresses its opinion on proposed legislation.

The general policy framework for environmental affairs is provided by the Community's environmental action programmes. These outline intended legislation and future activities, and discuss broader issues and possible future directions for policy and action in the Community. The first action programme commenced in 1973, and the fourth is now underway. Through the years emphasis has generally shifted from a reactive, curative approach to one based on preventative and proactive policies. Eleven Principles of Community Environmental Policy (see Box 1) have been established.

The Treaty of Rome was amended in 1987 to include the environment (with effect from 1992), thus providing a firm legal base for any environmental action taken by the Community. The Community's legislative instruments for environmental policy comprise Regulations, Directives and Decisions (see Box 2 for definitions). There has been an increase in legislation directed to the environment; on the whole, this has tended to be in the form of Directives.

The EEC Directive on the assessment of the effects of certain public and private projects on the environment (85/337/EEC) was passed on 3 July 1985. Formal compliance of member states was expected by 3 July 1988. National defence projects are officially exempted in Article 1 of the Directive.

The Directive (Appendix IV) establishes that "development consent for public and private projects which are likely to have significant effects on the environment should be granted only after prior assessment of the likely significant environmental effects of these projects has been carried out" (85/337/EEC). It requires that the developer shall provide information to the consenting authority which includes at the least:

1. The principle of prevention: it is better than cure.

2. Environmental effects should be taken into account at the earliest possible stage in decision making.

3. Exploitation of nature or natural resources which causes significant damage to the ecological balance must be avoided. The natural environment can only absorb pollution to a limited extent. It is an asset which may be used, but not abused.

4. Scientific knowledge should be improved to enable action to be taken.

5. The polluter pays principle: the cost of preventing and eliminating nuisances must be borne by the polluter, although some exceptions are allowed.

6. Activities carried out in one Member State should not cause deterioration of the environment in another.

7. The effects of environmental policy in the Member States must take account of the interests of the developing countries.

8. The Community and Member States should act together in international organisations and in promoting international and worldwide environmental policy.

9. The protection of the environment is a matter for everyone. Education is therefore necessary.

10. The principle of the appropriate level. In each category of pollution, it is necessary to establish the level of action (local, regional, national, Community, international) best suited to the type of pollution and to the geographical zone to be protected.

11. National environmental policies must be coordinated within the Community, without hampering progress at the national level. This is to be achieved by the implementation of the action programme and of the 'environment information agreement'.

Source: Haigh 1987

Box 1

A **Regulation** is directly applicable law in the Member States and is mostly used for rather precise purposes such as financial matters and the day to day management of the Common Agricultural Policy. It has so far been used only rarely for environmental matters.

A **Directive** is binding as to the results to be achieved, but leaves to the Member States the choice of form and methods. It is therefore the most appropriate instrument for more general purposes particularly where some flexibility is required to accommodate existing national procedures and, for this reason, is the instrument most commonly used for environmental matters.

A **Decision** is binding in its entirety upon those to whom it is addressed. It has been used in the environmental field in connection with international conventions and with certain procedural matters.

Source: Haigh 1987

Box 2

- a description of the project comprising information on the site, design and size of the project;
- a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;
- the data required to identify and assess the main effects which the project is likely to have on the environment; and
- a non-technical summary of the information mentioned above.

Details of the information to be included are provided in Annex III of the Directive.

Authorities who have information relevant to the proposed development should make it available to the developer. The Directive also requires that authorities likely to have concerns about the project "by reason of their specific environmental responsibilities" should be consulted before development consent is granted, as should the public.

The requirement for assessment is based on project type. Projects have been assigned to two classes, Annexes I and II of the Directive. Annex I comprises those projects which will always be assessed by reason of their nature and/or size (e.g. crude oil refineries, nuclear power stations, integrated chemical installations, etc). Annex II, the larger of the two, requires that projects in this category be assessed where "member states consider that their characteristics so require" (Article 4.2). These include the energy industry, the processing of metals, the chemical industry, and infrastructure projects, amongst others.

The emphasis of the Directive is on the provision of information to the consenting authority by the developer and other parties. It differs here from NEPA, which focuses on the production of an environmental impact statement.

3.3.1 Discussion

A general discussion of environmental impact assessment brought out the following points:

- The Directive at this point is very much a static tool.
- Difficulty is encountered in evaluating an environmental impact statement; litigation is not yet used in Europe as it is in the United States. A common misconception (of both public and governments) is that for an environmental impact assessment to be adequate or good, it must be complex and quantitative, even though the application of numerical criteria and/or models is not always appropriate.
- A common failing of assessments is that they focus on individual media (land, air, water) with few crossovers between them. There is also a need to consider the cumulative impacts of an action. For example, environmental analysis of projects should consider the net impact on regional and global environmental quality (e.g. potential contribution to acid rain, greenhouse effect, etc.).

3.4 Environmental Trends in Europe

Public awareness of the environment has increased world-wide over the last decade, no more so than in Europe. This increase in awareness has been accompanied by an increase in commitments to protect, conserve and improve the environment, by governments, industry, non-government organisations, interest groups and private individuals.

This has been exemplified by the rise of the Green Party in Europe, which was originally confined to West Germany but has now spread to include the European Parliament. The increased profile of environmental issues within the European community means that political pressure is being exerted, both on governments (e.g. by the voting public) and by governments.

In the European Community increased attention is being paid to the environment, with the result being an increase in legislation (mainly Directives) and a promise of more to come. In the member states, governments are, to varying degrees, being forced to consider environmental issues, led in the main by FRG and the Netherlands.

In the last year the influence of the individual consumer has become a major influence as the "green consumer" movement has grown. Individuals are now more able to choose environmentally friendly products because of their increased availability. Although the green consumer movement has been fuelled by environmental awareness, it in turn promotes environmental awareness, and thus its effects have been both economic and political.

The pending Single European Market of 1992, although focused on fairness in trading, will undoubtedly have its effects on approaches to environmental management. A process is already underway to establish a European environmental monitoring system, for example. Calls have been made for a European

Environmental Protection Agency. The Single Market could well result in improved flows of environmental information, with increased government intervention in environmental affairs. The latter will probably be in the form of regulations, although there are indications that economic measures such as effluent charges may also be utilised. These may be accompanied by moves to introduce corporate and/or individual liability for environmental damage.

Overall, the European Commission is encouraging the integration of environmental policy into other policies, thereby making environment one of a set of decision-making criteria.

3.5 US Army Experience in FRG

A brief resume was given of the US Army's experience in Europe, particularly FRG. Apart from American forces, troops stationed in FRG include Canadian, French, Belgian and Dutch forces. Some 90% of the American troops stationed in Europe are situated in FRG. Other units are deployed in northern Italy, with support units in the Benelux countries.

Since the devastation of World War II, West Germany has experienced economic prosperity. Quality of life issues have become important to its citizens, which includes an increase in awareness of environmental issues. Green issues are no longer the remit solely of the Green Party, but have been incorporated into all political party platforms.

The US Army has found that its activities in Europe are being subjected to scrutiny, due to increased environmental awareness on the part of the public and governments, and to changing attitudes to the presence of NATO forces in Europe. Some 85-90% of West Germany's drinking water comes from groundwater sources. Groundwater is now threatened with contamination, which has resulted in a backlash against any development which appears to threaten the environment. At the same time, Eastern bloc countries are no longer seen to represent the military threat that they once did. Accordingly, questions are being raised about the necessity of keeping permanent troops stationed in FRG.

The West German public is also concerned about the effects of armed forces' actions on the environment. The activities of the US Army do cause physical damage to the environment, for example through the undertaking of manoeuvres. Some 80% of this damage is to roads, sidewalks, facilities, etc, for which the US Army pays compensation. The remaining 20% of damage is to natural and farming areas, particularly field sites used for tank training. These sites have been set aside specifically for this use, and so compensation is not paid. The public has protested about these sites, both in terms of noise and the visual impact of damage. Other activities are more difficult to compensate for, such as the low level flights taking place throughout FRG every day, and training of troops at night.

The design and construction of the US Army's buildings, facilities etc, are carried out by the host country (to US Army specifications) and thus, as a guest force, the US Army is subject to the very detailed land use planning process and must comply with its regulations. These regulations may differ from state to state, concerning forestry for example, rendering compliance more difficult than it otherwise would be.

West German forces are also subject to planning regulations. Although the West German forces are officially exempt from Directive 85/337/EEC, they have voluntarily chosen to adopt an environmental impact assessment process. They have addressed this by developing methods for environmental assessment which are oriented to technological solutions and the impacts of construction. The latter is unfortunate, since it is the public's perception of operational impacts which is more critical at this stage. In addition, FRG has in place civil and criminal charges for environmental damage; members of the West German armed forces have been prosecuted and convicted.

The West German armed forces are also being pressured by the public. The response has been to use technological solutions, such as tank firing in sheds to reduce noise, or to cease activities, such as training at night. These solutions have increased the pressure on the US Army to adopt similar responses, responses which it does not consider to be appropriate. As a result of public action, military projects are being delayed or cancelled, through the Courts for example, by suing the Minister of Defence, or through objections lodged during the planning process.

The US Army has been making attempts to apply environmental impact assessment to its activities. As a preliminary initiative USACERL, sponsored by USAREUR, has developed an Environmental Review Guide. The Guide is intended to act as an early warning system to flag environmentally sensitive projects early in their planning phase, and has been found to be adequate in meeting its users' expectations. However, USAREUR is expected to implement environmental impact quantification procedures which will complement the Environmental Review Guide and provide a significant increase in the resolution of environmental analysis.

The US Army has also developed environmental design criteria, but these are used only on a project-to-project basis, if at all. As another part of its environmental activities, the US Army has also developed a process for environmental auditing which has not, as yet, been tested.

The US Army has encountered difficulties in collecting the baseline data it needs to assess the impacts of its activities. Some data is available, but is not coordinated. Attempts are now being made to collect data in collaboration with the German government, but the Germans have also been running into difficulties.

3.5.1 Procedural and Cultural Conflicts

There are several cultural differences between the US Army and FRG which may result in procedural and cultural conflicts arising from the activities of the US Army, particularly with respect to the implementation of environmental assessment. These are summarised below:

- the West German system of environmental management is orientated primarily to the use of regulations;
- solutions to environmental problems tend to be sought in the form of technological "fixes";
- there is a distinct lack of interdisciplinarity and the disciplines tend to restrict

their viewpoints to their own subjects;

- many of the US Army's West German employees are engineers by training who are not experienced with the principles or application of environmental impact assessment, whether this is as required under NEPA, the EEC Directive or national environmental legislation;

- individual rights are of prime importance in FRG;

- FRG is a fragmented society, abounding in different values and ideas;

- there is a tendency in West German society to accept and rely absolutely on the statements of experts, which can lead to problems.

These will be further addressed in Section 4.

4. SUMMARY OF ISSUES

As the preceding section makes clear, discussion of the US Army's activities in Europe, from the point of view of environmental impact assessment, covered a wide range of topics. In summary, these were:

- the proposed amendments to NEPA;
- the environmental assessment Directive 85/337/EEC;
- environmental trends in Europe; and
- activities and responsibilities of the US Army in West Germany.

The US Army is currently being confronted by a changing political climate in Europe, in which the environment is playing an ever-important role, and by a public critical of its presence and activities in West Germany, particularly from an environmental viewpoint.

Clearly the US Army would like to improve its environmental performance where it can, on both moral and scientific grounds. To achieve this, it:

- may be required to bring NEPA methods and tools to Europe;
- needs to establish a system to identify potential environmental problems and issues; and
- needs to improve design instructions.

At the same time, it must be seen to retain its status of sovereign immunity and to keep its environmental assessment activities on a voluntary basis.

Several issues which may impede the effective application of environmental impact assessment by the US Army include cultural and procedural differences between the USA and FRG, such as:

- need for a proactive approach;
- requirement of interdisciplinary teams and flexible attitudes; and
- lack of environmental staff in FRG, in terms of both number and experience.

In consequence, the meeting identified several possible solutions which would address these problems:

- training of staff (both US Army staff and FRG nationals employed by the US Army) in environmental impact assessment;
- identification of requirements for information and acquisition of baseline data;
- assistance from outside experts in carrying out a pilot environmental audit; and
- development of a policy paper to outline the issues currently facing the US Army in Europe, and how these will change after the year 2000.

Training in environmental impact assessment

If environmental impact assessment is to be carried out effectively, the US Army must have the necessary trained staff. Training would help to overcome the potential problems identified above as cultural and procedural differences, and would also provide:

- knowledge about existing resources;
- comprehension of other subject areas;
- knowledge of quantification;
- increasing interdisciplinarity;
- skills in project management; and
- confidence in ability to conduct and review environmental assessment.

CEMP's experience in training would suggest that the course be residential, using a combination of teaching techniques such as lectures, discussion groups and simulation exercises. The course content would vary with the need of the users, be they environmental staff, decision-makers, or general personnel.

Baseline data

The US Army has encountered difficulties in collecting the baseline data it needs to assess the impacts of its activities. Some data is available, but is not coordinated.

Any environmental impact assessment or environmental audit conducted by the US Army which suffers from lack of data will lose credibility. Thus, for the US Army to be effective, it needs to identify both its data requirements and data sources. CEMP would therefore recommend that the necessary steps be taken to identify and acquire the data needed, particularly in terms of:

- data sources;
- type of data available (e.g. EEC CORINE programme, federal and lander level);
- data which complements that of the US Army; and
- data which is not available (e.g. does not exist, is confidential, etc).

Environmental audit

The US Army has developed a protocol for environmental auditing which it has not yet tested. CEMP therefore recommends that an outside expert be brought in as part of a team which will carry out a pilot environmental audit of a military

community. The role of the expert will be to assist in drawing up terms of reference, conducting the audit, and providing a critique of the on-going process, and to prepare an evaluation of the protocol once the audit has been completed.

Development of policy paper

To achieve improved environmental performance, awareness of the kinds of problems the US Army faces both now and in the future is required. Accordingly, CEMP recommends the development of a policy paper by an outside expert to outline these issues, to achieve the following:

- a general awareness of problems the US Army is facing with respect to the environment;
- a general awareness of the series of events leading to this situation;
- a specific knowledge of environmental trends in Europe;
- an awareness of how environment and environmental policy will change after 1992 and after the year 2000.

CEMP's policy experience suggests that the paper be prepared as a research document with a supporting briefing paper. The target audience would be senior decision-makers and middle management.

5. CONCLUSIONS

The purpose of the armed forces is to defend the interests of the nation and those of its allies. However, for the US Army to continue to operate effectively in Europe, both in the long- and short-term, it needs to maintain good relations with its host countries. In the case of Europe, and particularly FRG, this means that environmental factors will need to be better integrated into decision-making.

To achieve this objective will require the training of personnel in environmental impact assessment and environmental auditing, acquisition of baseline data, and an awareness at all levels of the US Army of the changing political environment of Europe which will affect the activities of all organisations operating there, including the military.

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APPENDIX I

PROVISIONAL PROGRAMME AND SUPPORTING DOCUMENTATION

PROGRAMME (PROVISIONAL)

US ARMY MEETING

Environmental Impact Assessment in Europe
23-25 August 1989

Wednesday August 23

Morning	09.00	Introduction	Brian Clark
	09.30	Environmental trends in Europe	to be announced
	11.00	Coffee	
	11.30	Pollution trends in Europe	Amanda Chisholm
	12.30	Lunch	
Afternoon	14.00	EEC Directives	Amanda Chisholm/ Brian Clark
	15.00	EIA in Europe - general overview	Brian Clark
	16.00	General Discussion	All parties
Evening		Dinner	Venue to be announced

Thursday August 24

Morning	09.00	EIA in UK	Brian Clark
	10.00	EIA in Germany	Brian Clark/ Amanda Chisholm
	11.00	Coffee	
	11.30	Training needs for EIA in Europe	
Afternoon	12.30	Lunch	
	14.00	General Discussion	CEMP/Army personnel

Friday August 25

Morning	09.00	General Discussion (to continue as long as necessary)	Army personnel

Figure 2

PROVISIONS AND PROCEDURES IN THE APPLICATION OF THE EEC DIRECTIVE ON ENVIRONMENTAL ASSESSMENT

STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
Article 4 Projects listed in Annex I subject to mandatory EA. Projects listed in Annex II subject to EA at discretion of Member States based on application of criteria and thresholds. Simplified assessments or exemptions from assessment subject to compliance with conditions.	Article 6 Consultations with the relevant administrative authorities and other statutory bodies, and opinions obtained. Information obtained made available to public. Public consultations to obtain opinions.	Article 8 Information gathered under Articles 5-7 to be taken into account by competent authority in reaching a decision.	Article 9 When decision taken competent authority to make publicly known:- - content of decision and any conditions - reasons and considerations on which decision based. Similar information sent to Member States affected under Article 7.	Article 11 Information and experience exchanged between Member State and EEC, including criteria and thresholds adopted. Commission reports on experiences of Member States to the Council and Parliament after five years Subsequent amendments may be made to the Directive.
Article 5 Where EA required developer must supply information as specified in Annex III (See Table 4). Minimum required:- - description of project site, design and size - data to identify and assess main effects on environment - measures to avoid adverse environmental effects - non-technical summary.	Article 7 Where project is likely to have transfrontier effects, available information to be sent to Member States likely to be affected as a basis for consultations.		Article 10 Limitations placed on competent authority by: - national regulations - administrative provisions - accepted legal practices respecting industrial and commercial secrecy and safeguarding the public interest. These are respected.	Article 12 Directive to be adopted three years after notification. Texts of national laws to be sent by Member States to Commission. Article 13 Member States may apply stricter environmental rules, if desired.
ENVIRONMENTAL ASSESSMENT REPORTS	CONSULTATIONS	INFORMATION	DECISION-MAKING	INFORMATION EXCHANGE AND TIMING

Jnew,
Those marked X
are deleted.

ENVIRONMENTAL ASSESSMENT; STATUTORY INSTRUMENTS AND RELATED DOCUMENTS

7/9/88

1. Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment is printed in the Official Journal of the European Communities, page No. L 175/40 dated 5.7.85.

2. The following Regulations implementing the EC Directive have been made:

i) Town and Country Planning (Assessment of Environmental Effects) Regulations 1988 (SI No 1199)

X ii) Environmental Assessment (Scotland) Regulations 1988 (SI No. 1221)

X iii) Environmental Assessment (Salmon Farming in Marine Waters) Regulations 1988 (SI No. 1218)

X iv) Environmental Assessment (Afforestation) Regulations 1988 (SI No. 1207)

X v) Land Drainage Improvement Works (Assessment of Environmental Effects) Regulations 1988 (SI No. 1217)

X vi) Highways (Assessment of Environmental Effects) Regulations 1988 (SI No 1241)

X vii) Harbour Works (Assessment of Environmental Effects) Regulations 1988 (SI No.1336)

X viii) Town and Country Planning General Development (Amendment) Order 1988 (SI No.1272)

X ix) Town and Country Planning (General Development) (Scotland) Amendment Order 1988 (SI No.977)

X x) Town and Country Planning (General Development) (Scotland) Amendment No. 2 Order 1988 (SI No.1249)

3. The following SIs are in preparation:

i) The Electricity and Pipe-line Works (Assessment of Environmental Effects) Regulations 1988 (DEn) (laid before Parliament in draft on 29 July 1988)

X ii) Regulations on SPZs and EZs (DOE/WO and SDD).

X iii) Regulations on new towns (DOE/WO).

X iv) Further regulations on harbour works (DTp).

4. The following Northern Ireland Regulations are in preparation:

i) The Planning (Assessment of Environmental Effects) Regulations (Northern Ireland) 1988.

ii) The Roads (Assessment of Environmental Effects) Regulations (Northern Ireland) 1988.

iii) The Environmental Assessment (Afforestation) Regulations (Northern Ireland) 1988.

iv) The Environmental Assessment (Flood Relief Work) Regulations (Northern Ireland) 1988.

v) The Water (Assessment of Environmental Effects) Regulations (Northern Ireland) 1988.

vi) The Planning (General Development) (Amendment) Order (Northern Ireland) 1988.

vii) Regulations amending Schedule 1 to the Harbours Act (Northern Ireland) 1970.

5. Guidance

i) DOE Circular 15/88 (Welsh Office 23/88) "Environmental Assessment") dated 12 July 1988.

ii) SDD Circular 13/88 "Environmental Assessment: Implementation of EC Directive: The Environmental Assessment (Scotland) Regulations 1988" dated 12 July 1988.

iii) Advisory booklet on good EA practice in preparation.

DOE/PDC1A

8 August 1988

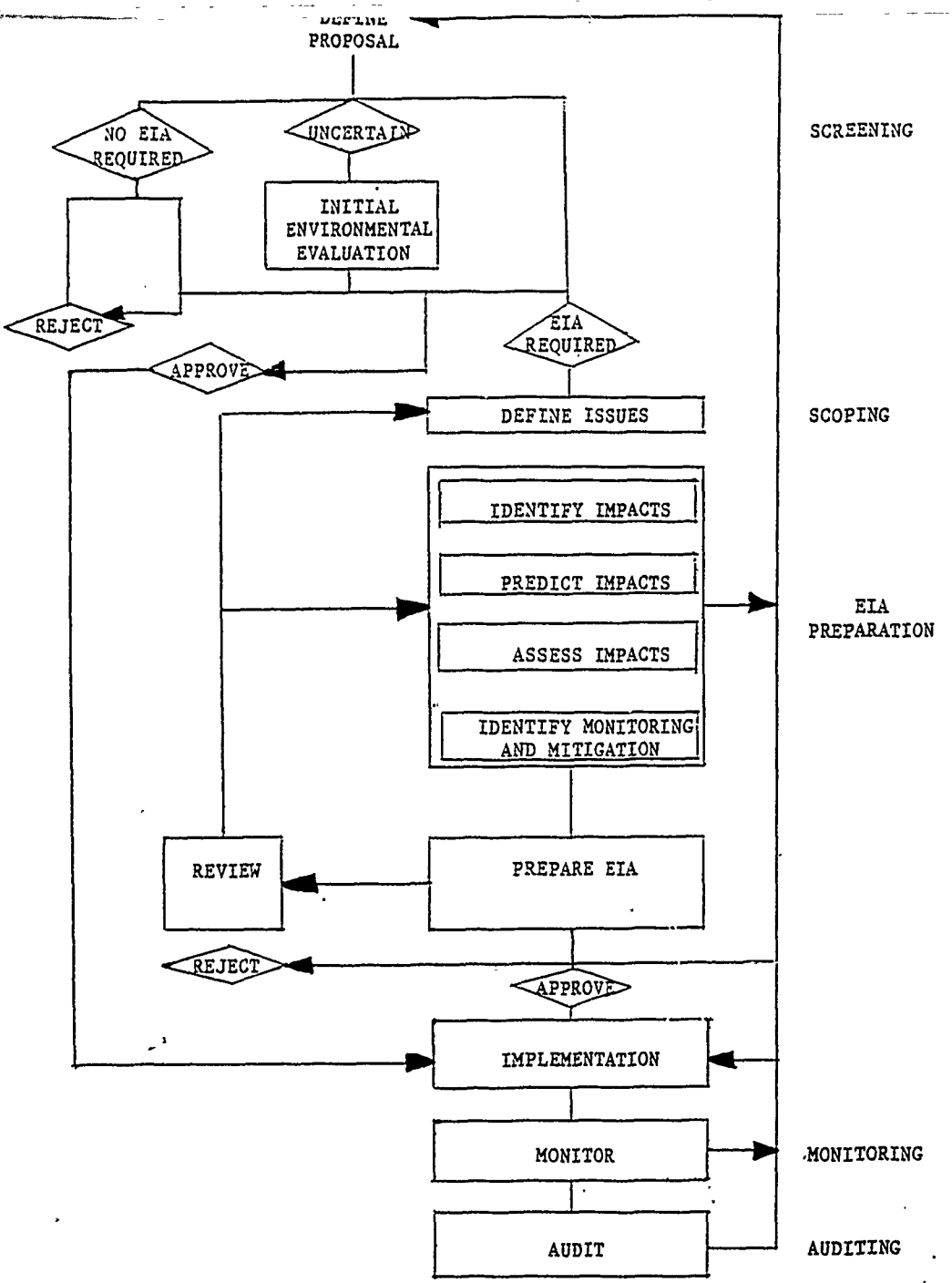


Figure 2 The EIA Process (after P Wathern)

FIGURE 3 DIFFERENT FORMS OF E.I.A

DESCRIPTIVE LABEL	SPATIAL SCALE OF DECISION-MAKING	MAIN SUBJECTS OF ANALYSIS	ALTERNATIVES
PROJECT EIA	PROJECT AT A PARTICULAR SITE - 5 to 10 MILES RADIUS, 50 MILES MAXIMUM.	IMPACTS OF PROJECT AT PROPONENTS PREFERRED SITE.	i) ALTERNATIVE SITES THAT COULD ACCOMMODATE PROJECT. ii) ALTERNATIVE TECHNOLOGICAL DESIGN FORMS OF PROJECT.
STRATEGIC EIA	DISTRIBUTION OF LOCALITIES OR SITES SUITABLE TO A PARTICULAR CATEGORY OF DEVELOPMENT IN A REGION.	SITES OR LOCALITIES SUITABILITY TO DEFINED CATEGORY OF DEVELOPMENT. TECHNOLOGICAL SUITABILITY TO SITES OR LOCALITIES.	i) ALTERNATIVE SERIES OF LOCALITIES OR SITES. ii) ALTERNATIVE USES OF SITES OR LOCALITIES.
PLAN EIA	CAN BE NATIONAL, REGIONAL OR LOCAL	COLLECTIONS OF POLICIES CONSTITUTING PLAN.	i) DIFFERENT INTEGRATION OF POLICY OPTIONS ii) ALTERNATIVE WAYS OF IMPLEMENTING POLICIES
POLICY	CAN BE NATIONAL, REGIONAL OR LOCAL	A POLICY SEEKING TO OPTIMIZE A SECTOR OBJECTIVE	i) ALTERNATIVE POLICY TO SOLVE EACH PROBLEM ii) ALTERNATIVE [illegible]

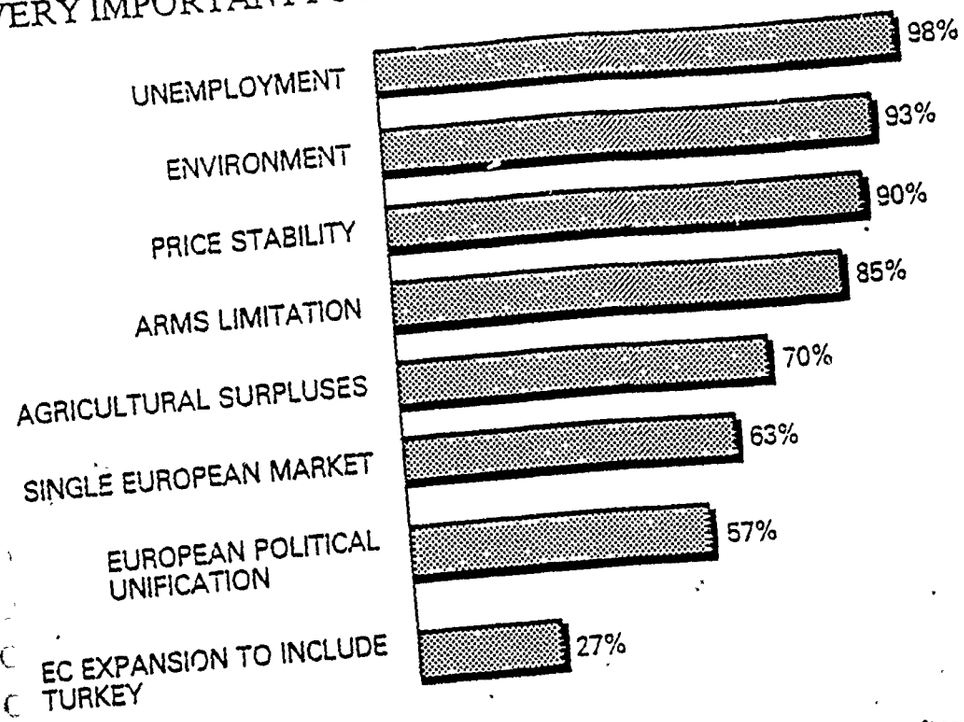
Box 1.8 **Public perceptions in the European Community of "growth versus the environment"**

	Development of the economy should take priority	*A choice must be made between the two*	*Protecting the environment is essential*	*Don't know*	*Total*
COMMUNITY	9	32	50	9	100
Belgium	8	49	35	8	100
Denmark	3	30	55	12	100
Germany	3	41	50	6	100
France	11	29	56	4	100
Ireland	23	26	40	11	100
Italy	6	32	55	7	100
Luxembourg	6	28	65	1	100
Netherlands	9	40	45	6	100
United Kingdom	11	32	48	9	100
Greece	12	23	47	18	100
Spain	12	17	47	24	100
Portugal	11	33	38	18	100

Whatever the *technical* features of the growth versus environmental choice, 50 per cent of Europeans say that environmental protection is essential. Only 9 per cent put "development" as a priority.

Source: European Commission, *The Europeans and their Environment in 1986*, Brussels.

Box 0.1 The political importance of environment in the European Community

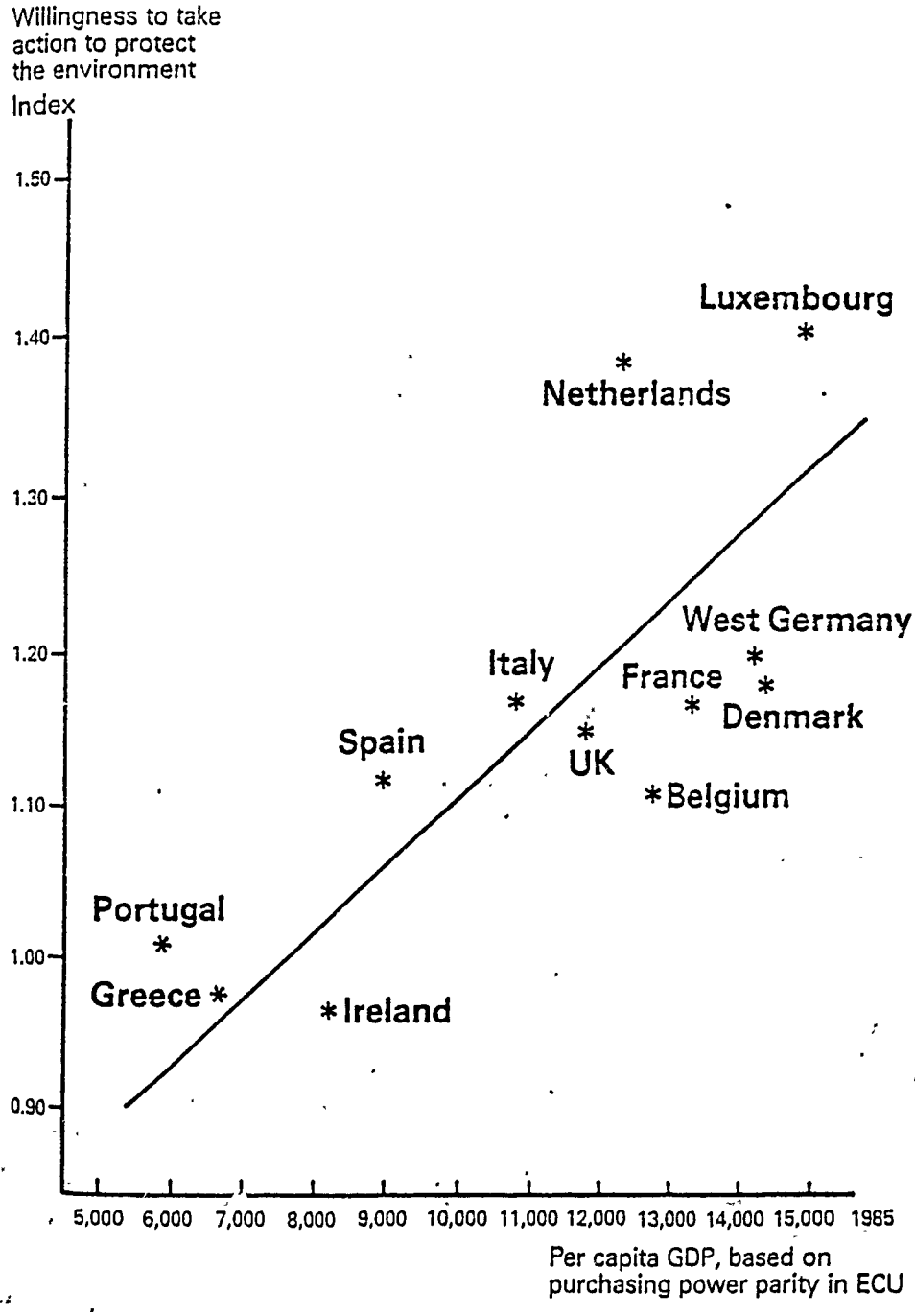


Those who reply only: don't know/no answer very from 1% to 4% from item to item.

Within the European Community, the environment ranks as the second most important political problem perceived by the electorate, ahead of inflation and arms control, and second only to unemployment.

Source: DG Information, Communication and Culture, Brussels, *Eurobarometer*, No. 30, December 1988.

Box 2.3 Average willingness to take action to protect the environment as a function of per capita GDP, by country



PARLIAMENTARY ASSEMBLY
OF THE
COUNCIL OF EUROPE

FORTIETH ORDINARY SESSION

RECOMMENDATION 1078 (1988)[1]

on environment policy in Europe (1984-87)

The Assembly,

1. Reaffirming its interest in the protection of the environment;

2. Convinced that the fight against pollution is the responsibility of everyone, including public authorities, industrialists and other citizens;

3. Emphasising that the environment, a vital element of the world in which our society exists, is also a part of our heritage, and that it must therefore be protected;

4. Noting with satisfaction that public awareness has increased, but nevertheless considering that people are not sufficiently well informed;

5. Convinced of the need to concentrate on teaching people to respect and protect the environment;

6. Welcoming the fact that the European Council, in adopting Article 130 R of the Single European Act, has laid the foundations of a real Community policy on the environment;

7. Noting that, following the example of OECD, the European Community has stressed the need to integrate environment policy into other policies, such as economic, agricultural, social, research and education;

8. Paying tribute to the work done at the Council of Europe by the Standing Committee of the Convention on the Conservation of European Wildlife and

1. *Assembly debate* on 6 May 1988 (8th Sitting) (see Doc. 5880, report of the Committee on the Environment, Regional Planning and Local Authorities, Rapporteur: Mr Fajardo).
Text adopted by the Assembly on 6 May 1988 (8th Sitting).

ASSEMBLÉE PARLEMENTAIRE
DU
CONSEIL DE L'EUROPE

QUARANTIÈME SESSION ORDINAIRE

RECOMMANDATION 1078 (1988)[1]

relative à la politique de l'environnement en Europe (1984-1987)

L'Assemblée,

1. Réaffirmant l'intérêt qu'elle porte à la protection de l'environnement;

2. Convaincue que la lutte contre la pollution est de la responsabilité de chacun, aussi bien des pouvoirs publics, des industriels que des citoyens;

3. Soulignant que l'environnement, élément vital du cadre de notre société, constitue également une composante de notre patrimoine et qu'à ce titre il doit être protégé;

4. Constatant avec satisfaction une prise de conscience du public, mais estimant néanmoins que l'information reste insuffisante;

5. Convaincue de la nécessité de mettre l'accent sur l'éducation au respect et à la protection de l'environnement;

6. Se félicitant du fait que le Conseil européen, en adoptant l'article 130 R de l'Acte unique européen, a jeté les fondements d'une véritable politique communautaire de l'environnement;

7. Notant qu'à l'instar de l'OCDE, la Communauté européenne a mis l'accent sur la nécessité d'intégrer la politique de l'environnement dans d'autres politiques: économique, agricole, sociale, de la recherche, de l'éducation, etc.;

8. Rendant hommage aux travaux accomplis au Conseil de l'Europe par le Comité permanent de la Convention relative à la conservation de la vie

1. *Discussion par l'Assemblée* le 6 mai 1988 (8e séance) (voir Doc. 5880, rapport de la commission de l'environnement, de l'aménagement du territoire et des pouvoirs locaux, rapporteur: M. Fajardo).
Texte adopté par l'Assemblée le 6 mai 1988 (8e séance).

Natural Habitats (Berne Convention), and regretting that this activity is restrained by the limited funds granted to it;

9. Welcoming the agreements reached at world and European levels, but regretting that ratified legal instruments are not always enforced at national level;

10. Welcoming, further, the efforts made to co-ordinate environment policies in Eastern and Western Europe in the context of the Conference on Security and Co-operation in Europe (CSCE),

11. Recommends that the Committee of Ministers:

a. invite member governments:

i. to organise awareness and information campaigns aimed at the public, particularly young people, on environmental issues;

ii. to review the international conventions in the environmental sphere and ratify these where necessary;

iii. to adapt national legislation to make it possible for conventions and decisions taken at international level to be enforced;

iv. to devote increased funds to the protection of the environment and to combating pollution;

v. systematically to integrate environment policy into other sectoral policies;

vi. to acknowledge and encourage the efforts of private organisations which are active in this sphere;

vii. to associate regional and local authorities with every action taken for the sake of the environment;

viii. to conclude agreements on good behaviour with the industries, foresters and farmers who cause or may cause pollution, in order to associate them with the fight against its harmful effects;

b. increase the funds allocated to the Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats;

c. follow up the Assembly's longstanding request that the draft European convention for the protection of international watercourses against pollution be concluded;

sauvage et du milieu naturel de l'Europe (Convention de Berne), et regrettant que cette activité soit freinée par les moyens financiers limités dont elle est dotée;

9. Se félicitant des accords intervenus aux niveaux européen et mondial, mais regrettant que les instruments juridiques ratifiés ne soient pas toujours mis en application au niveau national;

10. Se félicitant aussi des efforts déployés pour coordonner les politiques de l'environnement entre l'Europe de l'Est et de l'Ouest dans le cadre de la Conférence sur la sécurité et la coopération en Europe (CSCE),

11. Recommande au Comité des Ministres:

a. d'inviter les gouvernements membres:

i. à organiser des campagnes de sensibilisation et d'information du public, particulièrement des jeunes, aux questions de l'environnement;

ii. à passer en revue les conventions internationales dans le domaine de l'environnement et à procéder lorsqu'il y a lieu à leur ratification;

iii. à adapter les législations nationales afin qu'elles permettent l'application des conventions et des décisions prises au niveau international;

iv. à consacrer plus de moyens financiers à la protection de l'environnement et à la lutte contre la pollution;

v. à intégrer systématiquement la politique de l'environnement dans les autres politiques sectorielles;

vi. à reconnaître et à encourager les efforts menés par les organisations privées actives dans ce domaine;

vii. à associer les régions et les collectivités locales à toute action en faveur de l'environnement;

viii. à conclure des accords de bonne conduite avec les industries polluantes, les exploitants forestiers et les agriculteurs qui sont ou qui peuvent être causes de pollution, afin de les associer à la lutte contre les nuisances;

b. d'augmenter les moyens attribués au Comité permanent de la Convention relative à la conservation de la vie sauvage et du milieu naturel de l'Europe;

c. de donner suite à la demande déjà ancienne de l'Assemblée que soit conclue la convention européenne pour la protection des cours d'eau internationaux contre la pollution:

d. start work forthwith on a European politico-legal instrument (outline convention) for the purpose of protecting the soil from pollution, and associate the "regional planning" and "nature" sectors of the Council of Europe's intergovernmental activities with this task;

e. work closely together with the EEC in the environmental field, so as to avoid duplication of activities;

f. continue, in the context of CSCE, the policy of East-West co-operation in the environment sector by means of a new high-level meeting whose aim would be to examine the possibility of implementing a common policy.

d. d'entamer sans délai l'élaboration d'un instrument politico-juridique européen (convention-cadre) visant à la protection des sols contre la pollution, en associant à cette tâche le secteur «aménagement du territoire» et le secteur «nature» des activités intergouvernementales du Conseil de l'Europe;

e. de collaborer étroitement avec la CEE dans le domaine de l'environnement afin d'éviter tout chevauchement des activités;

f. de poursuivre, dans le cadre de la CSCE, la politique de coopération Est-Ouest dans le domaine de l'environnement par le biais d'une nouvelle réunion à haut niveau dont le but serait d'examiner les possibilités de la mise en œuvre d'une politique commune.

This set of short leaflets is published by the EIA Centre for use by those with interests in EIA training, particularly within the European Economic Community. Single copies are available free of charge. It is intended to update each of the leaflets at regular intervals. We would welcome suggestions of additional information, in any of the EEC languages, to incorporate into the next edition.

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EIA Leaflet Series

L1 EIA Centre and its Publications

L2 Useful Contact Points for EIA Trainers

L3 Sources and Types of Published Information on EIA

L4 Recent EIA Articles and Other Documentation

L5 EIA Legislation and Regulations in the EEC

L6 EIA Centre Information Service

5. EIA LEGISLATION AND REGULATIONS IN THE EEC

The EEC directive on the assessment of the effects of certain public and private projects on the environment (85/337/EEC) was due to be implemented by each Member State by 3 July 1988. This target was not met but most states are in the process of implementing its provisions. The known situation at July 1989, one year later, is summarised below. Additionally, a number of countries have more limited EIA provisions which pre-date 85/337. Also, in some countries, environmental impact assessments are being undertaken in advance of legislation on a non-mandatory basis.

It should be emphasised that a number of the countries reviewed are expected to introduce new EIA legislation or regulations during the coming months. Up-to-date information and further particulars should be obtained directly from the contact points in the Member States which are listed in Leaflet 2.

Belgium Implementation is to be mainly undertaken at the regional level of government, but the national government is preparing legislation relating to nuclear power stations which lie within its competence. In the Walloon region EIA has been implemented, to date, through decrees of 1985 (Moniteur belge, 24.1.86) and 1988 (Moniteur belge, 11.5.88). Flanders has recently made provision to introduce EIA through an Order of the Flemish Executive, March/April 1989.

Denmark EIA provision is through a recent law of 5.4.89 and an implementation decree of 23.6.89.

Federal Republic of Germany Three federal statutes have been prepared to implement the directive - a general statute, and two statutes relating to mining and planning. They were presented for comment to the Upper House in Autumn 1988 and are being processed for a decision by the Lower House during 1989. Once approved they will also provide the framework for application by the Länder (see 'Transposing the EIA directive into national law in the FRG', EIA Trainers' Newsletter 3, for further details).

France A formal EIA system was introduced in France over a decade ago (laws 76-629 of 10.7.76 and 76.663 of 19.7.76 and application decrees of 77-1141 of 12.10.77 and 77-1133 of 21.9.77 - see Journal Officiel, 13.7.76, 20.7.76, 13.10.77 and 8.1.77) and provisions relating to public inquiries were strengthened by further legislation approved in 1983 and implemented in 1985. To date, no subsequent revisions have been made.

Greece Limited provision for EIA in Greece predates the Directive - in Law 998 (1979) and Presidential Decree 1180 (1981). The legal provisions were strengthened by the enactment of Law 1650 (1986), especially Articles 3,4 and 5. However, this has not yet been implemented because only a few of the Presidential Decrees required for it's enforcement have been issued (see 'EIA Procedures in Greece', EIA Trainers' Newsletter 3, for further details). These application decrees have been drafted and are currently in the consultation stage.

Ireland EIA provision was originally made through Statutory Instrument No. 65 of the Local Government (Planning and Development) Regulations (1977). Department of Environment circulars to local authorities and other government departments advising how to implement the directive were issued on 1.7.88. Two Statutory Instruments relating to roads have subsequently been issued (Statutory Instruments nos. 221 and 222 of 1988) and other statutory provisions are to follow.

Italy Interim arrangements for the implementation of the directive have been made under Article 6 of Law no. 349 of 8.7.86 and the Application Decree of the President of the Council of Ministers no. 377 of 10.8.88 (see Gazzette officiale della republica italiana no. 204). The detailed technical instructions for implementation of the above decree have been incorporated into an additional decree approved by the Council of Ministers on 21.12.88. A more comprehensive bill, which will eventually supercede the above arrangements (and which will cover both Annex I and Annex II projects, and defines the respective powers and responsibilities of national and regional governments), is in preparation. (See 'EIA in Italy: a review', EIA Trainers' Newsletter 3, for further details. See, also Chapter 9, Lee, Wood and Gazidellis (1985) Arrangements for Environmental Impact Assessment and their Training Implications in the European Communities and North America: Country Studies Occasional Paper 13, Department of Planning and Landscape, University of Manchester, for a review of previously existing elements of an EIA system in Italy).

Luxenbourg The EIA concept is already embodied in a number of existing laws and impact studies have been prepared within this framework. In order to implement the directive fully a new draft law and two application decrees have been published with the objective of securing approval during 1989.

Netherlands Following several years of implementing EIA through an 'interim-policy', legislative provision was made for EIA through the Environmental Protection (General Provisions) Act 1986 and supporting regulations were issued in 1987 (see 'EIA and the Role of the EIA Commission in the Netherlands', EIA Trainers' Newsletter 3, for further details).

Portugal The basic legal framework for the introduction of EIA is contained in Articles 30 and 31 of the Environment Framework Law (1987). A proposal for an EIA law has been progressed through a number of drafts and both this and the detailed regulations for its implementation are due to be approved during 1989.

Spain The basic national EIA legislation is contained in the Royal Legislative Decree 1302/86 of 28.6.86 and the regulations for its implementation are contained in the Royal Decree 1131/88 of 30.9.88. It is envisaged that the range of Annex II projects subject to EIA will be extended through new statutory provisions relating to roads and nature conservation. Additionally some regional governments within the country have adopted their own EIA provisions and a number of other regional governments are in the process of doing so (see 'The legal framework for EIA in Spain', EIA Trainers' Newsletter 3, for further details).

United Kingdom By July 1989 14 sets of regulations and 7 items of guidance has been issued and an advisory booklet on good EIA practice is to be published shortly (see 'Implementation of the Environmental Assessment Directive in the UK', EIA Trainers' Newsletter 1, for further details. Also, Wood and McDonic 'Environmental Assessment: Challenge and Opportunity', The Planner 75 (11) 13-18).

Table 1
The Current Status of Implementation of the Directive

Belgium	Requires regional implementation. Some EIA-like procedures already exist for classified establishments.
Walloon	1985 decree on EIA has been clarified by a 19877 Arrete which contains some relevant provisions. No direct implementation of directive as yet.
Flanders	No legislation to date.
Brussels	?
Denmark	Some EIA-like procedures apply to classified establishments. Draft legislation was presented to Parliament in May to amend the National and Regional Planning Act and Municipal Planning Act to implement the Directive. A Notice will be issued by the Ministry for Environment on types of projects, and procedures.
France	EIA legislation was enacted in 1976 and implemented by decree in 1977 establishing a two-tier EIA system. Further legislation covers classified establishments and public inquiry procedures.
Germany	A draft law was passed on 26 September subject to 62 minor amendments. The Federal government will respond by the end of the year. Implementation will then be at the provincial level.
Greece	Regulations to amend the present EIA system which applies only to classified establishments are currently in preparation.
Ireland	The Department of the Environment issued a circular letter to local authorities on 1st July 1988 enclosing a copy of the directive and advising how it should be operated from 3rd July 1988. Regulations to replace the Circular will be issued. Planning laws already require EIA for certain industrial developments.
Italy	Decree of August 1988 implements the principles of the EIA Directive. A detailed decree applying its provisions must be passed within 90 days and then implemented by the regions. Some regions already have some EIA legislation.
Luxembourg	A draft law should be approved shortly.
Netherlands	Regulations to implement a 1986 enabling law were issued in 1987.
Portugal	A draft for discussion is being circulated around the relevant government departments.
Spain	The principles of the EIA directive were established in a 1986 decree which was implemented by a decree of 30 September 1988.

Table 2
The Decision-Making Context for EIA

Belgium	EIA is attached to the authorisation for classified establishments. Others not yet decided.
Denmark	EIA will be attached to the grant of planning permission by municipal, county and regional authorities.
France	EIA is integrated into more than 30 types of permit procedures applying to different classes of activity.
Germany	EIA will be integrated into various permit/approval procedures applying to different types of projects.
Greece	EIA is attached to the authorisation for classified establishments. Others not yet decided.
Ireland	EIA is attached to the application for development consent under Local Government (Planning and Development) Acts and to internal procedures and Ministerial approvals for local authority developments.
Italy	EIA will be integrated into various permit/approval procedures applying to different types of projects, some of which appear to be new.
Luxembourg	It appears that EIA will be attached to a separate environmental approval by the relevant Minister for each type of development.
Netherlands	EIA is part of a new integrated environmental approvals procedure. For each type of project, EIA is attached to one or more "crucial decisions" from amongst the existing project approvals required. Where more than one decision procedure is involved the competent authorities must coordinate their response to the EIA.
Spain	The EIA is attached to the decision of that public administrative body where the substantive competence for implementing or authorising the project lies. This authority must issue a Declaration of Environmental Impact indicating whether or not the project should proceed and under what conditions. In the case of government projects this is the Environment Directorate General of the Ministry of Public Works and Urbanism.

ENVIRONMENTAL ASSESSMENT TRAINING FOR DEVELOPING COUNTRIES

INTRODUCTION

This paper should be considered in the context not only of a number of actions being taken by O.E.C.D. relating to environmental impact assessment (E.I.A.) but also initiatives on E.I.A. of bi- and multi-lateral aid agencies, UN agencies and public and private developers both in developed and developing countries. Their actions would clearly need to be related to any initiatives on training that might be taken by O.E.C.D.

The specific terms of reference of this background paper are taken from Annex II of "The recommendation of Council on measures required to facilitate the environmental assessment of development assistance projects and programmes" (C (86) 26 (Final)) which states:

> "OECD Member countries' aid and environmental agencies could institute training courses in environmental assessment. The provision of training should be made to a number of target groups in the host countries including elected representatives and senior decision-makers in government and business, high level administrators, project managers, technical specialists, members of review bodies and representatives of environmental interest groups. The specific type of training to be undertaken would vary depending on the target group. For policy makers, for example, seminars should be conducted to demonstrate the negative effects which result from a failure to incorporate environmental elements in economic development planning and emphasize the benefits to be gained from environmentally sound planning. Training for project managers and technical specialists would emphasize procedures and methods for environmental assessment and their role and significance in environmental management."

The paper also takes account of the findings and recommendations contained in O.E.C.D. Environment Monograph 4 on "Environmental Assessment and Development Assistance". This monograph draws attention to a number of

major constraints when implementing environmental assessment including the lack of skilled manpower for environmental management. A number of actions that might be taken to help overcome this problem are listed. It is clear however that whilst attention is drawn to the need for training initiatives in one section of the O.E.C.D. report, the need for more systematic and structured training programmes will arise from many other actions proposed in the monograph. These include the need to establish and strengthen institutional frameworks, develop laws to undertake and implement environmental assessments, monitoring and auditing proposals and the strengthening of the science of E.I.A. (base line data, choice and application of appropriate methods, relevant procedural frameworks). In sum, many of the initiatives being proposed by O.E.C.D. have both implicit and explicit training requirements.

Whilst it is understood that the major concern of O.E.C.D. is to consider how aid and environmental agencies of member states might develop training initiatives in environmental assessment in developing countries, this paper initially considers certain general requirements for environmental assessment training before suggesting how aid and environmental agencies might positively contribute. This stance is adopted because much training in developing countries appears to be uncoordinated, unstructured, and sadly this also appears to be the case in a number of developed countries. The training programmes offered reflect a number of contradictions; idealism and intellectual committment (but often lacking suitable manpower and financial resources), opportunism, entrepreneurial ability (and in particular the ability to attract financial sponsorship) and response to the market.

The relationship between supply and demand is often unknown and there

appears to be a lack of systematic knowledge of what training exists and more importantly whether it is appropriate. Training as a priority is now being given great emphasis by many agencies (international, national and local) but it appears that there is often a lack of cooperation and collaboration in many of the initiatives being taken.

It must be emphasized that the author of this report is expressing personal views on training requirements. They are based however on more than ten years experience of training over 2,000 participants from both developing and developed countries, negotiating with sponsoring organizations concerning programme content and finance, and conducting environmental assessments in developed and developing countries. Wherever possible the points that are made are substantiated, but one of the real problems is the dearth of knowledge that exists relating to training on environmental assessment both qualitatively and quantitatively in developing countries. Sadly this comment also applies to many developed countries.

The paper, for convenience, is divided into the following sections, although some overlap is inevitable. Throughout the report suggestions and recommendations are made which O.E.C.D. might wish to consider should they wish to adopt a positive approach to environmental assessment training in developing countries.

1. Constraints on Training and Key Issues
2. General Training: Needs and Demand in a Climate of Change
3. Training Provision - Target Groups
   - Training Requirements for Different Target Groups
   - Types of Training

4. The Content of Training Programmes and Related Issues

5. Training of Personnel from Developing Countries in Developed Countries

6. Training Aids

1. CONSTRAINTS ON TRAINING AND KEY ISSUES

There can be no doubt that many of the constraints listed by O.E.C.D. have a direct effect on the ability of developing countries to implement sound environmental management and assessment strategies. With regard to training a number of general and specific points must be highlighted:-

(i) There is no general and universal definition of environmental assessment. Whilst there may be a general consensus of opinion of what it is attempting to achieve, i.e. predicting the environmental effects of adopting a particular plan, programme or project, the mechanisms to achieve this vary from country to country. For this reason there can be dangers when making general recommendations on training requirements given the differences that exist in institutional arrangements, legal and procedural requirements, and levels of scientific knowledge when conducting environmental assessments.

(ii) A key question is whether environmental assessment training should be considered as an activity in its own right or as an integral part of training for environmental management. It is also necessary to consider whether training in environmental asessment should be linked to an understanding of other evaluation techniques such as risk assessment, cost benefit analysis and planning evaluation techniques (planning balance sheets, goals achievement matrices).

(iii) The question arises as to whether a distinctive group of people should be trained in environmental assessment and thus establish a new professional group. With some exceptions it is suggested that in most developing countries many of the people concerned with environmental assessment will have other professional duties. It would therefore seem wrong to develop E.I.A. training to establish a new professional cadre.

(iv) There will be considerble dangers in any training initiatives in environmental assessment if those who develop expertise are not allowed to satisfactorily perform their duties. Two specific areas of concern should be noted. First there is a need for sufficient scientific knowledge, which will include an adequate data base so that those producing, and those reviewing, environmental assessments can adequately produce and review documents such as Environmental Impact Statements (EIS). Secondly a legal/procedural framework for coordinating environmental assessment will be required which as well as appearing sound on paper can be properly implemented. It is clear that many of the difficulties and much of the frustration expressed by those working on environmental assessment in developing countries relates to these two topics.

(v) As a predictive tool and procedural mechanism it can be argued that environmental assessment requires a multi-disciplinary approach. It has become clear in many developed and developing countries that whilst lip service is paid to the need for such an approach, it is difficult to achieve for many reasons. These include institutional conflicts between government departments and with specific regard to training, strict demarcations between Faculties and Departments that exist in many universities and training institutes.

2. GENERAL TRAINING: NEEDS AND DEMAND IN A CLIMATE OF CHANGE

It is impossible to state with any degree of accuracy current and future demands for training in environmental assessment. This applies to developed countries but in particular to developing countries. It is equally difficult to indicate the current supply of training. The only figures that exist relate to general training on environmental topics, and the accuracy and therefore relevance of the figures to environmental assessment training are problematic. For example, up to one-fifth of UNEP's budget since 1973 has been spent on education and training in which over 25,000 technicians, educators and decision makers have participated. Much of this training is very specialised with, for example, over 2,000 scientists having been trained in environmental monitoring. Much of this training falls under the joint UNESCO/UNEP International Environmental Education Programme (IEEP) which promotes general environmental education at national, regional and global levels.

The question of need is also extremely difficult to forecast. A study by the East West Environment and Policy Institute suggests that approximately 10,000 professionals in tropical developing countries must be equipped with environmental skills within the next ten years. The percentage required for environmental assessment is not stated. In the European Economic Community a survey for the Commission estimates that when a Directive on environmental assessment becomes mandatory in July 1988 there will be a need for approximately 2,000 people (decision makers, EIA project managers, technical specialists, review body members and environmental interest groups) to be trained to a lesser or greater extent in various aspects of environmental assessment.

Whilst other figures could be quoted there can be no doubt that there is a real need for training in many aspects of environmental assessment and that this need is greatest in developing countries. There is also evidence to suggest that the atmosphere both in a political and economic sense may now be more conducive to meet current needs for training in environmental assessment. This point is stressed because it would appear necessary for O.E.C.D. member states to cooperate and collaborate with the various bi- and multi-lateral agencies now taking major environmental initiatives. Many of these organizations state that training must increasingly become an integrated component of future actions. At the international level, recommendations by the Brundtland Commission, the World Industry Conference on Environmental Management, policy statements by the President of the World Bank and the proposals of a W.H.O. working party on the Health and Safety Component of E.I.A., all explicitly state that greater resources should be allocated to fostering environmental awareness, evaluating the environmental components of proposed projects and environmental policy formulation. It is imperative that training should be an integral part of such initiatives.

It is also important to note that there is evidence that in many developed countries now entering the post industrial society phase, one of the greatest areas of growth, measured both in investment and employment terms, is the growth in pollution activities and related enviromental control technologies. This point is stressed because there is now an increasing pool of manpower available in developed countries who have the potential to provide specialized inputs to the environmental assessment process in developing countries. It would seem useful for O.E.C.D. member states to consider how this expertise might be utilized in training and related initiatives in developing countries more positively than at the present time.

3. TRAINING PROVISION

Given that there is a need to develop training initiatives in environmental assessment in developing countries three closely related issues must be considered. These are (i) the target groups who would most benefit from training (ii) the types and levels of training required to achieve the many objectives of an environmental assessment process and (iii) general principles concerning the content of training programmes. Although there is considerable overlap between these three topics for convenience they are treated separately.

Target Groups

Whilst there are dangers in making generalizations about the target groups who will require training in environmental assessment, given that E.I.A. varies from one developing country to another, it is possible to identify certain distinctive groups who will normally be involved. These are:

(i) Decision makers/control authorities.

This group comprises those who control and operate an E.I.A. system in a country. Normally they will have power to indicate which projects (whether proposed by aid agencies, multi- national developers or public and private developers within a country) should be subject to an environmental assessment (screening) and what the study should cover (scoping). They comprise those who may impose legislation to operate an environmental assessment process (political decision makers) and those who are authorized to implement it by law and statutes, and provide technical advice and assistance (government administration in central and local government) as well as review authorities in countries where this exists or is planned for the future.

(ii) Development proponents

This group comprises a wide and diverse range of proponents who are responsible for plans, programmes and projects which are subject to environmental assessment. Often these are public and private developers, and in general proponents of projects, for the concept of applying environmental assessment to plans and policies is only slowly developing. The issue of externally financed projects clearly has important implications. The question of the type of environmental assessment that should be undertaken by bi- and multi-lateral aid agencies, and the conflicts that this may lead to with regard to national legislation, will also need to be considered by O.E.C.D. States as it has important training implications.

This group comprises many different actors who to a lesser or greater extent will require some form of training in environmental assessment. At one extreme are managers and administrators who will require to be made aware of the scope, utility and potential economic benefits of environmental assessment. Another group comprises those who may conduct all or part of the environmental assessment. Given the complexity of producing an environmental assessment, where management and scientific skills have to be carefully combined in a multi-disciplinary team, the type of training required will vary greatly. The project manager is a key person who will require specialized management and environmental training. This will be very different from the training of the specialist where emphasis must be placed on how detailed studies such as air, noise, water, health, visual and ecological assessments can be integrated into the comprehensive environmental assessment.

(iii) Other control authorities

This group comprises officials in control authorities who, although not responsible for a country's environmental assessment system, may contribute to its effective operation. It will cover government officials responsible for pollution control, land use planning, conservation policies and scientists with special knowledge of detailed aspects of environmental assessment. The training of this group will be less intensive than for control authorities and project proponents.

(iv) Professional advisers on environmental assessment and training institutions

This target group comprises several different parties. First there are many consultant companies in developing countries who are now assisting project proposals, and control authorities in certain E.I.A. tasks. Evidence suggests that many of these comprise engineering and economic consulting companies who are diversifying into environmental assessment. The second group comprises research institutes and academic institutions who are increasingly playing a greater role in the environmental assessment process by providing advice and technical support to either proponents or control/review authorities. Academic institutions also have a potentially key role to play in developing training programmes both at the undergraduate and postgraduate level and also in providing special training programmes. This target group can be described as one where the need is to "train the trainers" so that the concept of "sustainable training" can be developed. This should help to reduce the current reliance not only of participating in training programmes in developed countries, which is expensive, but also reduce the number

of "external" trainers "imported" from developed countries.

(v) Environmental interest groups and the public

In developed countries the concept of public participation is now firmly established as an integral part of the environmental assessment process. Whilst sometimes a contentious issue in developing countries there is evidence to suggest that greater participation is now occurring and will increase in the future. It may therefore be necessary to provide some training for a range of groups that include: (a) The Business Community (b) Environmental Groups and Societies, including relevant NGO's (c) the media (television, radio and press) (d) the public, including those who may be affected by project proposals and (e) training at all levels in schools (not specifically in environmental assessment but in environmental studies generally).

Training Requirements for the Different Target Groups

It is a well known fact that the range of activities required to operate an environmental assessment process are many and varied. The target groups identified will therefore have different training requirements. It is possible however to make certain generalizations about the distinctive types of training that should satisfy the various target groups. These are:-

(i) General awareness training

Training in this category will predominantly be for politicians, senior administrators, senior management in industry and business, and senior scientists. It should aim to provide a basic rationale of the utility of environmental assessment and an indication of the

broad legal, procedural and methodological mechanisms. It should try to put over the basic concept that environmental assessment is not an activity designed to block economic growth, but a tool to ensure that economic benefits are maximised, adverse environmental impacts minimized and mitigated and that sustainable development is achieved. Training should be designed to ensure that decision makers and senior administrators are aware of the management processes required to achieve sound environmental assessment: detailed knowledge of methods will not be required but an understanding of the utility of methods, as a scientific approach to project assessment, should be emphasized.

(ii) Training for environmental assessment project management

Whilst training of groups in the first category is to create an "environment of understanding" so that assessment can be undertaken in a specialized framework, training in this category is for those who will be responsible for the execution of environmental assessments. It must be emphasized that the form of this training will largely depend not only on existing knowledge but also previous experience. Training therefore will need to be considered at one level as a "refresher" course and updating of recent advances in the subject, whilst for others it will have to assume no knowledge and therefore be basic and start from first principles.

Within this category various types of training will be required.

(a) Project managers

Management skills relating to project control, finance and coordination of specific technical inputs will be required. Whilst this type of person may be described as a generalist he

will require a comprehensive knowledge of environmental procedures and methods.

(b) Technical experts

Given that environmental assessment normally requires that specialist types of assessment such as the prediction of noise, air or water impacts be undertaken, training for this group, which may comprise scientists from control authorities consultants project proponents, research institutes and academics, must attempt to show how specialized studies can be incorporated into an overall environmental assessment. Training therefore needs to focus on more technical aspects of environmental assessment with emphasis being placed on the "science" of E.I.A. Training will need to focus on methods (base line data and surveys, predictive and evaluation methods, monitoring and post audit studies) with less emphasis on legal and administrative aspects.

(c) Review experts

Evidence from many developing countries indicates that one of the weakest links in the E.I.A. process is project review. Whilst in a number of developed countries an independent review panel exists to advise, assist and review environmental assessments produced by a project proponent, it is normal in developing countries that the review be undertaken by a government agency. As a target group those who review environmental assessments are critical to the whole working of the process. Their training requirements will need to cover both the general understanding of the totality of the E.I.A.

process and a detailed knowledge of assessment methods. The ability to know when to consult specialized experts on individual impact predictions and interpretations presented in an E.I.A. will also need to be included in training programmes.

Types of Training

Given distinctive target groups requiring various forms of training it is now necessary to consider the types of training that exist, how they might be strengthened and whether new initiatives are necessary, and the form that these might take.

(i) Undergraduate level training

There is little evidence to suggest that environmental assessment training currently exists at first degree levels in institutions of higher education in developing countries. In certain degree course, such as engineering, environmental health, botany, geography, geology, etc., material is covered which is relevant as background knowledge for environmental assessment. This is also the case in a number of multi-disciplinary subjects such as environmental science and town planning. It is suggested that it would not be appropriate to introduce distinctive first degree courses in environmental assessment for there are considerable benefits if those who conduct environmental assessment have their initial training in a specific scientific subject. The introduction of the concept of E.I.A. in those single and multi-disciplinary subjects should be encouraged to stimulate a knowledge and potential interest in the concept. It is from undergraduates that many of the future experts in environmental

assessment will be drawn: one mechanism to consider could be for O.E.C.D. to initiate "recruitment" seminars for undergraduates to encourage them to take postgraduate training in environmental management subjects in which environmental assessment should increasingly become an important component.

(ii) Postgraduate training

It is suggested that it is at this level that positive steps could be taken by O.E.C.D. to develop specific training in environmental assessment. In a number of developed countries, notably the U.S., Canada, the Netherlands and Britain, environmental assessment is included as part of training in land use planning and environmental management degrees. This is also now slowly taking place in a number of developing countries and in particular in the Far East.

It is recommended that two major initiatives be taken to develop environmental assessment training. First, a number of potential training centres should be identified in selected developing countries and distinctive courses in environmental assessment be established, which could be supported with staff and finance by O.E.C.D. member states. Students should be selected from various cogent disciplines and a cadre formed of training experts who could develop the various management and technical aspects of environmental assessment. Second, it is proposed that "awareness training" be introduced into specialized post graduate courses which interface with environmental assessment. This could include science based courses such as geology, soil science, pollution and technology control, ecology and health engineering, multi-disciplinary courses such as land use and transportation planning and social science courses such as economics and sociology.

(iii) Short course training

As there is a clear need to supply the demand for the shortfall of experts in environmental assessment as soon as possible, it would appear that short courses are the only practical solution, given the time it will take to instigate training programmes at institutions of higher education. Short courses should be geared to all target groups and should cover both general awareness training and specialized components of the E.A. process. Whilst in general these courses should operate at the national level there is a case for more specialized courses being conducted on an appropriate regional basis.

General awareness training should be targetted at senior decision makers and administrators. Given their seniority and availability of these should be of one or two days duration. There would be considerable merit if this target group could participate at the beginning and end of larger and more specialized courses so that they are familiar with the general context of the skills being developed by their specialist staff. The short courses for decision makers should cover aspects of policy, management or environmental assessment and the economic benefits of environmental assessment.

Short courses for technical experts in the other target groups will need to take a variety of forms. The following topics would appear to be most appropriate but will need to be tailored to either the sectoral priorities of a given country or reflect distinctive institutional procedures which may exist.

(a) E.I.A. procedures: geared to those who will operate the

environmental assessment system with emphasis on legal and implementation considerations.

(b) E.I.A. methods: this type of course will emphasise (i) the utility and application of environmental assessment methods and (ii) the integration of specific evaluative techniques (air, ecology, noise, pollution) into a structured environmental assessment system. This type of course should rely heavily on the use of case studies to indicate the practical utility and application of environmental assessment methods.

(c) Environmental assessment - project management: the management of the E.A. process. Skills to manage, finance and communicate will be required.

Depending on the level of knowledge of environmental assessment in a developing country, and in particular where the concept is new, it may be necessary to provide training courses that combine all the three components listed above. After this it will be possible to develop more specialized courses tailored to particular sectors such as Agriculture, Forests, Industrial Development, and Energy Projects or specific facets of the E.I.A. process. All of the above courses would require a period of study of from one to three weeks.

(iv) On the job training

The amount of "on the job" training in developing countries is currently very limited. It would seem useful to encourage this "hands on" training. One appropriate mechanism which O.E.C.D. member states could assist in developing would be to encourage proponents

of projects, and in particular bi-lateral and multi-lateral aid agencies and multi-national corporations to include a systematic environmental training component as a contractual obligation. Wherever possible those on short course training or post graduate studies should be encouraged to spend a period of time in the project office of those conducting an environmental assessment to gain practical experience.

(v) Training the trainers

As a priority action there would appear to be a pressing need to train certain members of selected key training institutions in developing countries on the multifarious aspects of environmental assessment. This should apply to those who will be encouraged to add aspects of environmental assessment to their training courses, normally at the postgraduate level, but in particular to those mounting specific E.I.A. training programmes. A number of options would appear available all of which could be assisted by O.E.C.D. member states.

(1) Placement of potential trainers at established training centres already teaching environmental management and assessment in developed countries.

(2) Organizing special training courses, probably on a Regional basis, for course organizers and key contributors.

(3) Short placements in agencies that control the environmental assessment process in both developed and developing countries and also in organizations conducting environmental assessment.

In all three options it would be necessary to tailor the training to the

particular requirements of a country but the major objective must be to give the trainers practical rather than academic experience of environmental assessment. This must be emphasized, as one of the major criticisms of current training in E.I.A. in Europe is that too theoretical an approach is adopted. It is this target group who will most benefit from the specialized training course, seminars and symposia held in developed countries.

Training the Public

In many developed countries environmental awareness has been developed as a result of media initiatives, and in particular television. Just as great strides have been made to help reduce illiteracy through television, consideration should be given as to how this medium could be used in a structured manner to put over key concepts relating to the environment. One form could be the development of "distance learning" packages whilst another approach could be to screen the increasing number of documentary films, produced by organizations such as T.V.E., with UNEP backing, on major environmental topics.

4. THE CONTENT OF TRAINING PROGRAMMES AND RELATED ISSUES

It is not felt practicable or appropriate at this stage to define an "ideal" programme for the different components of environmental assessment training at various levels or for specific target groups. This is a special task the O.E.C.D. might wish to consider initiating and which would require the bringing together of both E.I.A. practitioners and trainers from developed and developing countries. A number of general principles that should be considered when formulating training initiatives are listed:

(i) It must be stated whether training is geared to generalists or specialists and this must be made explicit in the content of training programmes. Both may be desirable given that the institutional structure of E.I.A. in countries varies greatly.

(ii) Wherever possible training should be practical rather than theoretical. If possible field work and practical studies should be incorporated. If this is not possible emphasis should be placed on case studies, practical exercises and simulation activities. Training must be geared towards implementation of sound E.I.A. processes.

(iii) In general the greatest training need is to foster an understanding of how to undertake environmental assessments. Most emphasis should, except where courses are specifically geared to an understanding of legal/procedural requirements and environmental management, be placed on both inter- and intra- assessment methods and the assessment of specific impacts.

(iv) Wherever possible the trainers should have practical experience of conducting environmental assessments or be directly involved in the E.I.A. process (legal, procedural, review experience).

(v) Ideally the trainers should be nationals of the country where the training takes place. Initially it may be necessary to utilize experts from other developing and developed countries who have practical experience both of and E.I.A. system and training.

(vi) The length of short courses should be tailored to the specific needs

of the target group. Awareness courses for senior personnel should probably be of one or two days duration. More technical courses would normally need to extend from two to three weeks.

5. TRAINING OF PERSONNEL FROM DEVELOPING COUNTRIES IN DEVELOPED COUNTRIES

Currently a limited number of personnel from developing countries are undertaking some form of training in environmental assessment in developed countries which include East and West Europe, America and Canada. The type of courses varies greatly but includes:

(i) Postgraduate or short courses geared to participants from the developed country which can be attended by participants from developing countries.

(ii) Specific courses exclusively mounted for developing country participants. The majority of these courses only teach environmental assessment as a component. The length of courses which have been identified range from three to ten months.

(iii) Seminars and workshops of from one week to three months duration on general or specific aspects of E.I.A. normally attended by participants from both developed and developing countries.

The question arises as to the potential benefits and disbenefits of training participants from developing countries in developed countries. Clearly there are distinctive benefits if one accepts the evaluations made

by those who have participated in such training. Major ones include:

(i) Training relevant to the participants' needs which is not available in their own country;

(ii) An exchange of ideas with participants and faculty from both developed and developing countries;

(iii) An ability to concentrate on training and not be diverted by professional or domestic duties;

(iv) An opportunity to be placed in appropriate Departments, agencies, research institutes and organizations to gain practical experience of environmental assessment. This is something which is increasingly encouraged by bilateral aid agencies who have sponsored participants on training courses.

(v) The possibility of gaining access to source materials and utilizing technical equipment relating to assessment which may not yet be available, but have potential, in the trainee's country.

There are also a number of disbenefits, which include:

(i) The cost of training, linked to travel, can be very expensive.

(ii) The relevance of the training may be diminished given cultural and technical contrasts that may exist.

(iii) There is no guarantee that those who have access to funding for foreign training are necessarily the most appropriate persons.

Given the current shortage of trained personnel in environmental assessment it would appear that more training initiatives should be taken in both developed and developing countries. In EEC member states the proposed Directive on Environmental Assessment, to be implemented in July 1988, is acting as a catalyst for a number of training initiatives. It is likely therefore that capacity for training personnel from developing countries will be increased.

To maximise on this training potential however it is suggested that a number of actions could be taken.

(i) Aid Agencies and Environmental Ministries/Departments should be encouraged to play a more active role within their own country in training personnel from developing countries. This could take a number of forms. First by mounting specific training modules and secondly by financially supporting, providing faculty and establishing strong working relationships with key environmental training centres in their own country. Following on from this it would be possible to develop training packages with personnel from aid agencies, Environmental Ministries and training institutes which could be presented in selected developing countries, or on a regional basis, and include the faculty experts from the developing country. This should be a relevant and cost effective form of training and would have the added benefit of Aid Agency and Environmental Departmental officials working closely together.

(ii) A proposal by a number of European Environmental Training Centres has recently been made to establish a Federation of European Environmental Training Centres. One objective is to encourage the

exchange of personnel between countries and develop training aids for environmental assessment. Another key objective is to play a catalytic role in encouraging training in developing countries and to assist personnel coming to Europe from developing countries to receive the most appropriate training in the most appropriate institutions. Federations such as this could be encouraged by aid agencies in O.E.C.D. states to play a more important role in training institutions.

6. TRAINING AIDS

As well as the need for trained personnel in developing countries another priority requirement is for various environmental assessment training aids of which the following can be identified.

(i) Books, information and data on environmental assessment. There is often a paucity of such material and it is suggested that O.E.C.D member states could provide valuable assistance in establishing focal environmental assessment information points in selected developing countries.

(ii) As well as books there is a need to assemble in developing countries evidence of "good practice" in environmental assessment. This could include case studies of environmental assessment and existing guidelines from developed countries. It is recognized that certain countries such as the U.S., through the B.P.A., already donate much information to countries in the Third World. What seems to be required is information which is relevant to these countries and

this is one initiative that O.E.C.D. member states could consider implementing.

(iii) Whilst a number of training manuals and training packages have been made available there appears to be a need to develop this form of training aid. In this Aid Agencies, Environmental Departments and Training Institutes in developed countries could be encouraged to collaborate and produce both general and specific packages. These would be strengthened if they incorporate audio visual material.

(iv) It has been shown from the evaluation of environmental assessment training programmes that one of the most successful training devices is simulation games. Whilst a number exist they have predominantly been produced for use in developed countries. There is a need to develop others designed specifically for the needs of developing countries. Some of the most successful games include a role playing component and again collaboration between aid agencies, environmental Departments and trainers in developed and developing countries to produce relevant and appropriate examples would appear to be an important initiative.

APPENDIX II

WORKSHOPS, SEMINARS AND CONFERENCES ORGANISED BY CEMP

1989

4th Intensive Training Course on ***Environmental Impact Assessment***
2 July-22 September, Aberdeen

10th International Seminar on ***Environmental Impact Assessment***
9-22 July, Aberdeen

1988

Advanced Policy Workshop on ***Environmental Management and Impact Assessment*** 23-30 October, Crete

Managing the Environmental Impact of Onshore Oil and Gas Activities
25-27 September, York

3rd Intensive Training Course on ***Environmental Impact Assessment***
3 July-23 September, Aberdeen

9th International Seminar on ***Environmental Impact Assessment***
10-23 July, Aberdeen

Seminar on ***Environmental Impact Assessment***
19-31 March, Cairo

Conference on ***Pipelines and the Environment***
7-10 March, Bournemouth

1987

River Spey Symposium 6-8 November, Grantown-on-Spey

Training Course on ***The Assessment of Environmental Health Effects of Development Proposals*** 13-19 September, Aberdeen

2nd Intensive Training Course on ***Environmental Impact Assessment***
5 July-26 September, Aberdeen

8th International Seminar on ***Environmental Impact Assessment***
12-25 July, Aberdeen

Regional Training Workshops on ***The EEC Environmental Assessment Directive: Use and Practice*** January, Birmingham, York and Edinburgh

1986

1st Intensive Training Course on ***Environmental Impact Assessment***
30 June-26 September, Aberdeen

7th International Seminar on ***Environmental Impact Assessment***
6-19 July, Aberdeen

Conference on ***The EEC Directive on Environmental Assessment***
30-31 January, London

1985

International Seminar on ***Environmental Diplomacy***
21-27 November, Ireland

International Workshop on ***Risk Analysis in Developing Countries***
27 October-1 November, Hyderabad, India

6th International Seminar on ***Environmental Impact Assessment***
14-27 July, Aberdeen

2nd Kuwait Workshop on ***Environmental Impact Assessment and Environmental Management*** 14-24 January, Kuwait

1984

Seminar on ***Environmental Impact Assessment*** in collaboration with the Greek Government 29 October-2 November, Athens

International Seminar on ***Environmentally Sound Development in the Energy and Mining Industries*** 21-28 October, Crete

5th International Seminar on ***Environmental Impact Assessment***
8-21 July, Aberdeen

Workshop on ***Environmental Impact Assessment and Land Use Planning*** 16-21 January, Hong Kong

APPENDIX III

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969, AS AMENDED*

An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Environmental Policy Act of 1969."

PURPOSE

SEC. 2. The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

TITLE I

DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

SEC. 101. (a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

*Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, and Pub. L. 94-83, August 9, 1975.

(c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

SEC. 102. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal Government shall—

(A) Utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) Identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) Include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

(i) The environmental impact of the proposed action,

(ii) Any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) Alternatives to the proposed action,

(iv) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes;

(D) Any detailed statement required under subparagraph (c) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,

(ii) the responsible Federal official furnishes guidance and participates in such preparation,

(iii) the responsible Federal official independently evaluates such statement prior to its approval and adoption, and

(iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this Act; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.

(E) Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) Recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) Make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) Initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) Assist the Council on Environmental Quality established by title II of this Act.

SEC. 103. All agencies of the Federal Government shall review their present statutory authority, administrative regulations, and current policies and procedures for the purpose of determining whether there are any deficiencies or inconsistencies therein which prohibit full compliance with the purposes and provisions of this Act and shall propose to the President not later than July 1, 1971, such measures as may be necessary to bring their authority and policies into conformity with the intent, purposes, and procedures set forth in this Act.

SEC. 104. Nothing in section 102 or 103 shall in any way affect the specific statutory obligations of any Federal agency (1) to comply with criteria or standards of environmental quality, (2) to coordinate or consult with any other Federal or State agency, or (3) to act, or refrain from acting contingent upon the recommendations or certification of any other Federal or State agency.

SEC. 105. The policies and goals set forth in this Act are supplementary to those set forth in existing authorizations of Federal agencies.

TITLE II

COUNCIL ON ENVIRONMENTAL QUALITY

SEC. 201. The President shall transmit to the Congress annually beginning July 1, 1970, an Environmental Quality Report (hereinafter referred to as the "report") which shall set forth (1) the status and condition of the major natural, manmade, or altered environmental classes of the Nation, including, but not limited to, the air, the aquatic, including marine, estuarine, and fresh water, and the terrestrial environment, including, but not limited to, the forest, dryland, wetland, range, urban, suburban and rural environment; (2) current and foreseeable trends in the quality, management and utilization of such environments and the effects of those trends on the social, economic, and other requirements of the Nation; (3) the adequacy of available natural resources for fulfilling human and economic requirements of the Nation in the light of expected population pressures; (4) a review of the programs and activities (including regulatory activities) of the Federal Government, the State and local governments, and nongovernmental entities or individuals with particular reference to their effect on the environment and on the conservation, development and utilization of natural resources; and (5) a program for remedying the deficiencies of existing programs and activities, together with recommendations for legislation.

SEC. 202. There is created in the Executive Office of the President a Council on Environmental Quality (hereinafter referred to as the "Council"). The Council shall be composed of three members who shall be appointed by the President to serve at his pleasure, by and with the advice and consent of the Senate. The President shall designate one of the members of the Council to serve as Chairman. Each member shall be a person who, as a result of his training, experience, and attainments, is exceptionally well qualified to analyze and interpret environmental trends and information of all kinds; to appraise programs and activities of the Federal Government in the light of the policy set forth in title I of this Act; to be conscious of and responsive to

the scientific, economic, social, esthetic, and cultural needs and interests of the Nation; and to formulate and recommend national policies to promote the improvement of the quality of the environment.

SEC. 203. The Council may employ such officers and employees as may be necessary to carry out its functions under this Act. In addition, the Council may employ and fix the compensation of such experts and consultants as may be necessary for the carrying out of its functions under this Act, in accordance with section 3109 of title 5, United States Code (but without regard to the last sentence thereof).

SEC. 204. It shall be the duty and function of the Council—

(1) to assist and advise the President in the preparation of the Environmental Quality Report required by section 201 of this title;

(2) to gather timely and authoritative information concerning the conditions and trends in the quality of the environment both current and prospective, to analyze and interpret such information for the purpose of determining whether such conditions and trends are interfering, or are likely to interfere, with the achievement of the policy set forth in title I of this Act, and to compile and submit to the President studies relating to such conditions and trends;

(3) to review and appraise the various programs and activities of the Federal Government in the light of the policy set forth in title I of this Act for the purpose of determining the extent to which such programs and activities are contributing to the achievement of such policy, and to make recommendations to the President with respect thereto;

(4) to develop and recommend to the President national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation;

(5) to conduct investigations, studies, surveys, research, and analyses relating to ecological systems and environmental quality;

(6) to document and define changes in the natural environment, including the plant and animal systems, and to accumulate necessary data and other information for a continuing analysis of these changes or trends and an interpretation of their underlying causes;

(7) to report at least once each year to the President on the state and condition of the environment; and

(8) to make and furnish such studies, reports thereon, and recommendations with respect to matters of policy and legislation as the President may request.

SEC. 205. In exercising its powers, functions, and duties under this Act, the Council shall—

(1) Consult with the Citizens' Advisory Committee on Environmental Quality established by Executive Order No. 11472, dated May 29, 1969, and with such representatives of science, industry, agriculture, labor, conservation organizations, State and local governments and other groups, as it deems advisable; and

(2) Utilize, to the fullest extent possible, the services, facilities and information (including statistical information) of public and private agencies and organizations, and individuals, in order that duplication of effort and expense may be avoided, thus assuring that the Council's activities will not unnecessarily overlap or conflict with similar activities authorized by law and performed by established agencies.

SEC. 206. Members of the Council shall serve full time and the Chairman of the Council shall be compensated at the rate provided for Level II of the Executive Schedule Pay Rates (5 U.S.C. 5313). The other members of the Council shall be compensated at the rate provided for Level IV of the Executive Schedule Pay Rates (5 U.S.C. 5315).

SEC. 207. The Council may accept reimbursements from any private nonprofit organization or from any department, agency, or instrumentality of the Federal Government, any State, or local government, for the reasonable travel expenses incurred by an officer or employee of the Council in connection with his attendance at any conference, seminar, or similar meeting conducted for the benefit of the Council.

SEC. 208. The Council may make expenditures in support of its international activities, including expenditures for: (1) international travel; (2) activities in implementation of international agreements; and (3) the support of international exchange programs in the United States and in foreign countries.

SEC. 209. There are authorized to be appropriated to carry out the provisions of this chapter not to exceed $300,000 for fiscal year 1970, $700,000 for fiscal year 1971, and $1,000,000 for each fiscal year thereafter.

APPENDIX IV

EEC DIRECTIVE 85/337/EEC
THE ASSESSMENT OF THE EFFECTS OF CERTAIN PUBLIC AND PRIVATE PROJECTS ON THE ENVIRONMENT

COUNCIL DIRECTIVE

of 27 June 1985

on the assessment of the effects of certain public and private projects on the environment

(85/337/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Articles 100 and 235 thereof,

Having regard to the proposal from the Commission (1),

Having regard to the opinion of the European Parliament (2),

Having regard to the opinion of the Economic and Social Committee (3),

Whereas the 1973 (4) and 1977 (5) action programmes of the European Communities on the environment, as well as the 1983 (6) action programme, the main outlines of which have been approved by the Council of the European Communities and the representatives of the Governments of the Member States, stress that the best environmental policy consists in preventing the creation of pollution or nuisances at source, rather than subsequently trying to counteract their effects; whereas they affirm the need to take effects on the environment into account at the earliest possible stage in all the technical planning and decision-making processes; whereas to that end, they provide for the implementation of procedures to evaluate such effects;

Whereas the disparities between the laws in force in the various Member States with regard to the assessment of the environmental effects of public and private projects may create unfavourable competitive conditions and thereby directly affect the functioning of the common market; whereas, therefore, it is necessary to approximate national laws in this field pursuant to Article 100 of the Treaty;

Whereas, in addition, it is necessary to achieve one of the Community's objectives in the sphere of the protection of the environment and the quality of life;

Whereas, since the Treaty has not provided the powers required for this end, recourse should be had to Article 235 of the Treaty;

Whereas general principles for the assessment of environmental effects should be introduced with a view to supplementing and coordinating development consent procedures governing public and private projects likely to have a major effect on the environment;

Whereas development consent for public and private projects which are likely to have significant effects on the environment should be granted only after prior assessment of the likely significant environmental effects of these projects has been carried out; whereas this assessment must be conducted on the basis of the appropriate information supplied by the developer, which may be supplemented by the authorities and by the people who may be concerned by the project in question;

Whereas the principles of the assessment of environmental effects should be harmonized, in particular with reference to the projects which should be subject to assessment, the main obligations of the developers and the content of the assessment;

Whereas projects belonging to certain types have significant effects on the environment and these projects must as a rule be subject to systematic assessment;

Whereas projects of other types may not have significant effects on the environment in every case and whereas these projects should be assessed where the Member States consider that their characteristics so require;

Whereas, for projects which are subject to assessment, a certain minimal amount of information must be supplied, concerning the project and its effects;

Whereas the effects of a project on the environment must be assessed in order to take account of concerns to protect human health, to contribute by means of a better environment to the quality of life, to ensure maintenance of the diversity of species and to maintain the reproductive capacity of the ecosystem as a basic resource for life;

(1) OJ No C 169, 9. 7. 1980, p. 14.
(2) OJ No C 66, 15. 3. 1982, p. 89.
(3) OJ No C 185, 27. 7. 1981, p. 8.
(4) OJ No C 112, 20. 12. 1973, p. 1.
(5) OJ No C 139, 13. 6. 1977, p. 1.
(6) OJ No C 46, 17. 2. 1983, p. 1.

Whereas, however, this Directive should not be applied to projects the details of which are adopted by a specific act of national legislation, since the objectives of this Directive, including that of supplying information, are achieved through the legislative process;

Whereas, furthermore, it may be appropriate in exceptional cases to exempt a specific project from the assessment procedures laid down by this Directive, subject to appropriate information being supplied to the Commission,

HAS ADOPTED THIS DIRECTIVE:

Article 1

1. This Directive shall apply to the assessment of the environmental effects of those public and private projects which are likely to have significant effects on the environment.

2. For the purposes of this Directive:

'project' means:

— the execution of construction works or of other installations or schemes,

— other interventions in the natural surroundings and landscape including those involving the extraction of mineral resources;

'developer' means:

the applicant for authorization for a private project or the public authority which initiates a project;

'development consent' means:

the decision of the competent authority or authorities which entitles the developer to proceed with the project.

3. The competent authority or authorities shall be that or those which the Member States designate as responsible for performing the duties arising from this Directive.

4. Projects serving national defence purposes are not covered by this Directive.

5. This Directive shall not apply to projects the details of which are adopted by a specific act of national legislation, since the objectives of this Directive, including that of supplying information, are achieved through the legislative process.

Article 2

1. Member States shall adopt all measures necessary to ensure that, before consent is given, projects likely to have significant effects on the environment by virtue *inter alia*, of their nature, size or location are made subject to an assessment with regard to their effects.

These projects are defined in Article 4.

2. The environmental impact assessment may be integrated into the existing procedures for consent to projects in the Member States, or, failing this, into other procedures or into procedures to be established to comply with the aims of this Directive.

3. Member States may, in exceptional cases, exempt a specific project in whole or in part from the provisions laid down in this Directive.

In this event, the Member States shall:

(a) consider whether another form of assessment would be appropriate and whether the information thus collected should be made available to the public;

(b) make available to the public concerned the information relating to the exemption and the reasons for granting it;

(c) inform the Commission, prior to granting consent, of the reasons justifying the exemption granted, and provide it with the information made available, where appropriate, to their own nationals.

The Commission shall immediately forward the documents received to the other Member States.

The Commission shall report annually to the Council on the application of this paragraph.

Article 3

The environmental impact assessment will identify, describe and assess in an appropriate manner, in the light of each individual case and in accordance with the Articles 4 to 11, the direct and indirect effects of a project on the following factors:

— human beings, fauna and flora,

— soil, water, air, climate and the landscape,

— the inter-action between the factors mentioned in the first and second indents,

— material assets and the cultural heritage.

Article 4

1. Subject to Article 2 (3), projects of the classes listed in Annex I shall be made subject to an assessment in accordance with Articles 5 to 10.

2. Projects of the classes listed in Annex II shall be made subject to an assessment, in accordance with Articles 5 to 10, where Member States consider that their characteristics so require.

To this end Member States may *inter alia* specify certain types of projects as being subject to an assessment or may establish the criteria and/or thresholds necessary to determine which of the projects of the classes listed in Annex II are to be subject to an assessment in accordance with Articles 5 to 10.

Article 5

1. In the case of projects which, pursuant to Article 4, must be subjected to an environmental impact assessment in accordance with Articles 5 to 10, Member States shall adopt the necessary measures to ensure that the developer supplies in an appropriate form the information specified in Annex III inasmuch as :

(a) the Member States consider that the information is relevant to a given stage of the consent procedure and to the specific characteristics of a particular project or type of project and of the environmental features likely to be affected ;

(b) the Member States consider that a developer may reasonably be required to compile this information having regard *inter alia* to current knowledge and methods of assessment.

2. The information to be provided by the developer in accordance with paragraph 1 shall include at least :

— a description of the project comprising information on the site, design and size of the project,

— a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects,

— the data required to identify and assess the main effects which the project is likely to have on the environment,

— a non-technical summary of the information mentioned in indents 1 to 3.

3. Where they consider it necessary, Member States shall ensure that any authorities with relevant information in their possession make this information available to the developer.

Article 6

1. Member States shall take the measures necessary to ensure that the authorities likely to be concerned by the project by reason of their specific environmental responsibilities are given an opportunity to express their opinion on the request for development consent. Member States shall designate the authorities to be consulted for this purpose in general terms or in each case when the request for consent is made. The information gathered pursuant to Article 5 shall be forwarded to these authorities. Detailed arrangements for consultation shall be laid down by the Member States.

2. Member States shall ensure that :

— any request for development consent and any information gathered pursuant to Article 5 are made available to the public,

— the public concerned is given the opportunity to express an opinion before the project is initiated.

3. The detailed arrangements for such information and consultation shall be determined by the Member States, which may in particular, depending on the particular characteristics of the projects or sites concerned :

— determine the public concerned,

— specify the places where the information can be consulted,

— specify the way in which the public may be informed, for example by bill-posting within a certain radius, publication in local newspapers, organization of exhibitions with plans, drawings, tables, graphs, models,

— determine the manner in which the public is to be consulted, for example, by written submissions, by public enquiry,

— fix appropriate time limits for the various stages of the procedure in order to ensure that a decision is taken within a reasonable period.

Article 7

Where a Member State is aware that a project is likely to have significant effects on the environment in another Member State or where a Member State likely to be significantly affected so requests, the Member State in whose territory the project is intended to be carried out shall forward the information gathered pursuant to Article 5 to the other Member State at the same time as it makes it available to its own nationals. Such information shall serve as a basis for any consultations necessary in the framework of the bilateral relations between two Member States on a reciprocal and equivalent basis.

Article 8

Information gathered pursuant to Articles 5, 6 and 7 must be taken into consideration in the development consent procedure.

Article 9

When a decision has been taken, the competent authority or authorities shall inform the public concerned of :

— the content of the decision and any conditions attached thereto,

— the reasons and considerations on which the decision is based where the Member States' legislation so provides.

The detailed arrangements for such information shall be determined by the Member States.

If another Member State has been informed pursuant to Article 7, it will also be informed of the decision in question.

Article 10

The provisions of this Directive shall not affect the obligation on the competent authorities to respect the limitations imposed by national regulations and administrative provisions and accepted legal practices with regard to industrial and commercial secrecy and the safeguarding of the public interest.

Where Article 7 applies, the transmission of information to another Member State and the reception of information by another Member State shall be subject to the limitations in force in the Member State in which the project is proposed.

Article 11

1. The Member States and the Commission shall exchange information on the experience gained in applying this Directive.

2. In particular, Member States shall inform the Commission of any criteria and/or thresholds adopted for the selection of the projects in question, in accordance with Article 4 (2), or of the types of projects concerned which, pursuant to Article 4 (2), are subject to assessment in accordance with Articles 5 to 10.

3. Five years after notification of this Directive, the Commission shall send the European Parliament and the Council a report on its application and effectiveness. The report shall be based on the aforementioned exchange of information.

4. On the basis of this exchange of information, the Commission shall submit to the Council additional proposals, should this be necessary, with a view to this Directive's being applied in a sufficiently coordinated manner.

Article 12

1. Member States shall take the measures necessary to comply with this Directive within three years of its notification (1).

2. Member States shall communicate to the Commission the texts of the provisions of national law which they adopt in the field covered by this Directive.

Article 13

The provisions of this Directive shall not affect the right of Member States to lay down stricter rules regarding scope and procedure when assessing environmental effects.

Article 14

This Directive is addressed to the Member States.

Done at Luxembourg, 27 June 1985.

For the Council

The President

A. BIONDI

(1) This Directive was notified to the Member States on 3 July 1985.

ANNEX I

PROJECTS SUBJECT TO ARTICLE 4 (1)

1. Crude-oil refineries (excluding undertakings manufacturing only lubricants from crude oil) and installations for the gasification and liquefaction of 500 tonnes or more of coal or bituminous shale per day.

2. Thermal power stations and other combustion installations with a heat output of 300 megawatts or more and nuclear power stations and other nuclear reactors (except research installations for the production and conversion of fissionable and fertile materials, whose maximum power does not exceed 1 kilowatt continuous thermal load).

3. Installations solely designed for the permanent storage or final disposal of radioactive waste.

4 Integrated works for the initial melting of cast-iron and steel.

5. Installations for the extraction of asbestos and for the processing and transformation of asbestos and products containing asbestos : for asbestos-cement products, with an annual production of more than 20 000 tonnes of finished products, for friction material, with an annual production of more than 50 tonnes of finished products, and for other uses of asbestos, utilization of more than 200 tonnes per year.

6. Integrated chemical installations.

7. Construction of motorways, express roads (1) and lines for long-distance railway traffic and of airports (2) with a basic runway length of 2 100 m or more.

8. Trading ports and also inland waterways and ports for inland-waterway traffic which permit the passage of vessels of over 1 350 tonnes.

9. Waste-disposal installations for the incineration, chemical treatment or land fill of toxic and dangerous wastes.

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(1) For the purposes of the Directive, 'express road' means a road which complies with the definition in the European Agreement on main international traffic arteries of 15 November 1975.

(2) For the purposes of this Directive, 'airport' means airports which comply with the definition in the 1944 Chicago Convention setting up the International Civil Aviation Organization (Annex 14).

ANNEX II

PROJECTS SUBJECT TO ARTICLE 4 (2)

1. Agriculture

(a) Projects for the restructuring of rural land holdings.

(b) Projects for the use of uncultivated land or semi-natural areas for intensive agricultural purposes.

(c) Water-management projects for agriculture.

(d) Initial afforestation where this may lead to adverse ecological changes and land reclamation for the purposes of conversion to another type of land use.

(e) Poultry-rearing installations.

(f) Pig-rearing installations.

(g) Salmon breeding.

(h) Reclamation of land from the sea.

2. Extractive industry

(a) Extraction of peat.

(b) Deep drillings with the exception of drillings for investigating the stability of the soil and in particular:

— geothermal drilling,

— drilling for the storage of nuclear waste material,

— drilling for water supplies.

(c) Extraction of minerals other than metalliferous and energy-producing minerals, such as marble, sand, gravel, shale, salt, phosphates and potash.

(d) Extraction of coal and lignite by underground mining.

(e) Extraction of coal and lignite by open-cast mining.

(f) Extraction of petroleum.

(g) Extraction of natural gas.

(h) Extraction of ores.

(i) Extraction of bituminous shale.

(j) Extraction of minerals other than metalliferous and energy-producing minerals by open-cast mining.

(k) Surface industrial installations for the extraction of coal, petroleum, natural gas and ores, as well as bituminous shale.

(l) Coke ovens (dry coal distillation).

(m) Installations for the manufacture of cement.

3. Energy industry

(a) Industrial installations for the production of electricity, steam and hot water (unless included in Annex I).

(b) Industrial installations for carrying gas, steam and hot water; transmission of electrical energy by overhead cables.

(c) Surface storage of natural gas.

(d) Underground storage of combustible gases.

(e) Surface storage of fossil fuels.

(f) Industrial briquetting of coal and lignite.

(g) Installations for the production or enrichment of nuclear fuels.

(h) Installations for the reprocessing of irradiated nuclear fuels.

(i) Installations for the collection and processing of radioactive waste (unless included in Annex I).

(j) Installations for hydroelectric energy production.

4. Processing of metals

(a) Iron and steelworks, including foundries, forges, drawing plants and rolling mills (unless included in Annex I).

(b) Installations for the production, including smelting, refining, drawing and rolling, of non-ferrous metals, excluding precious metals.

(c) Pressing, drawing and stamping of large castings.

(d) Surface treatment and coating of metals.

(e) Boilermaking, manufacture of reservoirs, tanks and other sheet-metal containers.

(f) Manufacture and assembly of motor vehicles and manufacture of motor-vehicle engines.

(g) Shipyards.

(h) Installations for the construction and repair of aircraft.

(i) Manufacture of railway equipment.

(j) Swaging by explosives.

(k) Installations for the roasting and sintering of metallic ores.

5. Manufacture of glass

6. Chemical industry

(a) Treatment of intermediate products and production of chemicals (unless included in Annex I).

(b) Production of pesticides and pharmaceutical products, paint and varnishes, elastomers and peroxides.

(c) Storage facilities for petroleum, petrochemical and chemical products.

7. Food industry

(a) Manufacture of vegetable and animal oils and fats.

(b) Packing and canning of animal and vegetable products.

(c) Manufacture of dairy products.

(d) Brewing and malting.

(e) Confectionery and syrup manufacture.

(f) Installations for the slaughter of animals.

(g) Industrial starch manufacturing installations.

(h) Fish-meal and fish-oil factories.

(i) Sugar factories.

8. Textile, leather, wood and paper industries

(a) Wool scouring, degreasing and bleaching factories.

(b) Manufacture of fibre board, particle board and plywood.

(c) Manufacture of pulp, paper and board.

(d) Fibre-dyeing factories.

(e) Cellulose-processing and production installations.

(f) Tannery and leather-dressing factories.

9. Rubber industry

Manufacture and treatment of elastomer-based products.

10 Infrastructure projects

(a) Industrial-estate development projects.

(b) Urban-development projects.

(c) Ski lifts and cable-cars.

(d) Construction of roads, harbours, including fishing harbours, and airfields (projects not listed in Annex I).

(e) Canalization and flood-relief works.

(f) Dams and other installations designed to hold water or store it on a long-term basis.

(g) Tramways, elevated and underground railways, suspended lines or similar lines of a particular type, used exclusively or mainly for passenger transport.

(h) Oil and gas pipeline installations.

(i) Installation of long-distance aqueducts.

(j) Yacht marinas.

11. **Other projects**

(a) Holiday villages, hotel complexes.

(b) Permanent racing and test tracks for cars and motor cycles.

(c) Installations for the disposal of industrial and domestic waste (unless included in Annex I).

(d) Waste water treatment plants.

(e) Sludge-deposition sites.

(f) Storage of scrap iron.

(g) Test benches for engines, turbines or reactors.

(h) Manufacture of artificial mineral fibres.

(i) Manufacture, packing, loading or placing in cartridges of gunpowder and explosives.

(j) Knackers' yards.

12. Modifications to development projects included in Annex I and projects in Annex I undertaken exclusively or mainly for the development and testing of new methods or products and not used for more than one year.

ANNEX III

INFORMATION REFERRED TO IN ARTICLE 5 (1)

1. Description of the project, including in particular :

   — a description of the physical characteristics of the whole project and the land-use requirements during the construction and operational phases,

   — a description of the main characteristics of the production processes, for instance, nature and quantity of the materials used,

   — an estimate, by type and quantity, of expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed project.

2. Where appropriate, an outline of the main alternatives studied by the developer and an indication of the main reasons for his choice, taking into account the environmental effects.

3. A description of the aspects of the environment likely to be significantly affected by the proposed project, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors.

4. A description (1) of the likely significant effects of the proposed project on the environment resulting from :

   — the existence of the project,

   — the use of natural resources,

   — the emission of pollutants, the creation of nuisances and the elimination of waste ;

   and the description by the developer of the forecasting methods used to assess the effects on the environment.

5. A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.

6. A non-technical summary of the information provided under the above headings.

7. An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the developer in compiling the required information.

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(1) This description should cover the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project.

APPENDIX V

CEMP INFORMATION

CEMP

CENTRE FOR ENVIRONMENTAL MANAGEMENT AND PLANNING

STATEMENT OF CAPABILITY

ENVIRONMENTAL ASSESSMENT

THE BENEFITS

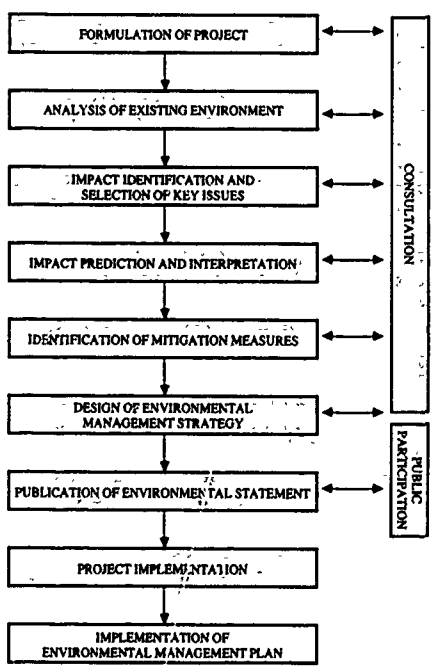
There are many benefits to both developers and review authorities from the adoption of Environmental Assessment. When planning a major project, whether it be a road, quarry, power station or fish farm, a systematic environmental assessment may lead to:

- **planning permission without major delays**
- **the design of a better project**
- **a demonstrated commitment to environmental management**
- **informed third parties and the public**
- **significant savings in cost**

Review authorities will have in front of them, as part of the planning application, a scientific and objective assessment of the likely impacts of a project which can be used as a basis for discussions with the developer, statutory consultees and the public.

In many countries of the world, including the United Kingdom, Environmental Assessment is now a mandatory requirement. EEC Directive 85/337/EEC was implemented in July 1988 by the U.K. and other EEC countries and stipulates that an Environmental Assessment has to be undertaken for certain projects. As part of the Assessment process an Environmental Statement will have to be produced to demonstrate to Senior Management, the Local Planning Authority, Statutory Consultees and the public that a careful and systematic process has been followed. The Environmental Statement is not another hurdle to development but will lead to reduced planning delays and significant savings in cost.

ENVIRONMENTAL ASSESSMENT PROCESS



The Centre for Environmental Management and Planning is recognised as a world leader in the field of Environmental Assessment. In 1972 the U.K. Government commissioned CEMP to develop the technique of Environmental Impact Assessment for its application in Britain and the results of that project were published as a Manual for the Assessment of Major Development Proposals. In 1988 the World Health Organization designated CEMP as their Collaborating Centre for Environment and Health Impact Assessment.

Since 1972 CEMP have undertaken Environmental Assessments for industry, reviewed Environmental Statements for Local Authorities and trained professional Scientists, Engineers and Planners in the methods of EIA . CEMP have been involved in projects that include Hinkley Point Power Station, the Channel Tunnel, South Warwickshire Coal Field, Dounreay Reprocessing Plant, St Fergus Gas Terminal, Sullom Voe Oil Terminal, Oil and Gas Pipelines, Railways and the Dalyan Resort Complex.

SERVICES

An Environmental Assessment (EA) cannot be undertaken by just one person. A multi-disciplinary team is required to work with a project manager who will devise the work programme, co-ordinate the studies and prepare the environmental statement. CEMP provide many services ranging from undertaking Assessments for industry to reviewing them for Local Planning Authorities.

Specifically CEMP:

- **Implement comprehensive E.A. programmes**
  A wide range of skills are necessary in the assembly of multi-disciplinary EA team. CEMP Ecologists, Engineers and Economists work with a dedicated project manager who plans and implements a full Assessment programme with client reporting a fundamental part.

- **Supervise Environmental Assessment programmes**
  CEMP specialists and project managers advise clients undertaking Environmental Assessments on methods and techniques. When preparing the environmental statement they will advise on content, style and compliance with government regulations and best practice. Staff and consultants often work at the clients office.

- **Provide Specialist Skills**
  CEMP's technical specialists are available to complement your own team, for one day, one week or one year

- **Undertake Special Projects**
  Environmental Assessment may comprise a number of discreet stages including: **Base line surveys** of ecology, water quality, air quality, noise and vibration, economy, recreation, landscape, traffic or geology; **Visual Impact Assessment; Noise Assessment; Pollution Studies** including mathematical models; **Health Impact Assessment; Prediction of Ecological, Economic and Land Use Impacts.** In all these subjects CEMP can provide professional advice.

- **Review Environmental Assessments**
  Government Departments, Statutory Consultees and Local Planning Authorities are required to review Environmental Statements, validate content and check compliance with national and international standards. CEMP provides a confidential and independent review service.

- **Public Inquiries**
  Experienced principal consultants assist in the preparation of the Statement of Case, prepare Proofs, lead evidence and assist in the cross examination of evidence.

- **Auditing and Monitoring**
  Knowing that your operation is running smoothly and that performance standards are being met is vital to the efficient management of any business. CEMP's environmental scientists and process engineers can provide a confidential and objective audit service.

- **Training Professionals**
  Thoroughly trained professional staff are essential and the training division of CEMP has provided training for over 2000 practitioners in Environmental Assessment. Both in Aberdeen and at clients offices we provide seminars, courses and workshops ranging from 1 day to 3 months that are dedicated to the client's needs.

RESOURCES

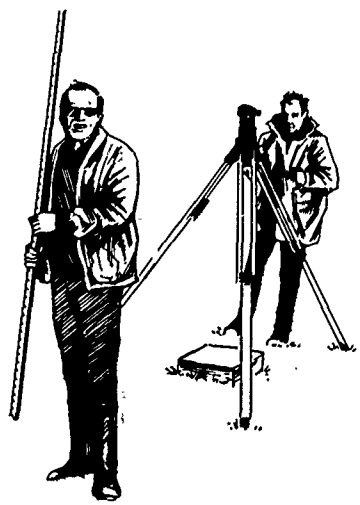
Based at the University of Aberdeen, CEMP has available the full resources of the University including libraries, laboratories, computers, and meters and gauges for monitoring environmental impact. Equipment is available for soil, vegetation, water and air sampling and the latest equipment is available for monitoring

- Noise and vibration
- Atmospheric pollution including H_2S, NO_x Asbestos
- Water pollution including PCBs, Heavy Metals, Hydrocarbons

In addition the fully serviced analytical chemistry laboratories of our sister company, Aberdeen University Chemical Services, are constantly available to us.

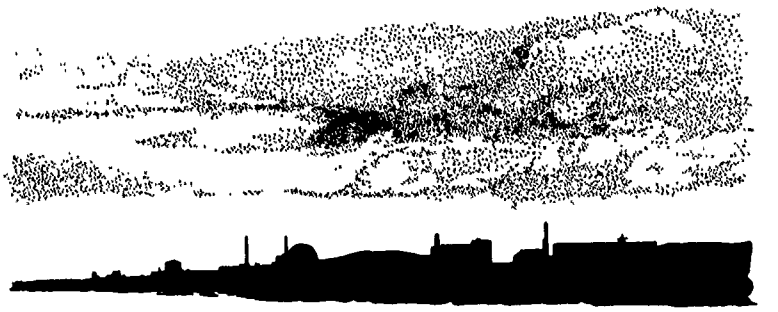
Within CEMP the in house team of environmental scientists, engineers and planners co-ordinate the work of consultants and use their specialist skills when appropriate in managing particular projects. The team of consultants from within and outside the University cover most disciplines with particular expertise in planning, civil and chemical engineering and the natural sciences. Many CEMP consultants have a long history of practical experience in industry whilst others have worked in central and local government.

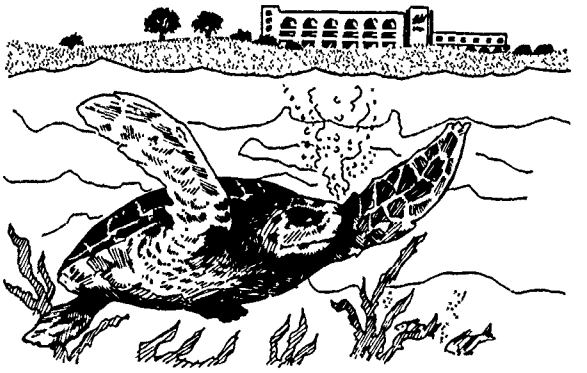
Specialists cover the disciplines of Agriculture, Agricultural Economics, Biology, Chemistry, Chemical Engineering, Ecology, Economics, Engineering, Environmental Health, Forestry, Geography, Geology, Health Physics, Planning, Soil Science, Transport and Traffic Engineering.



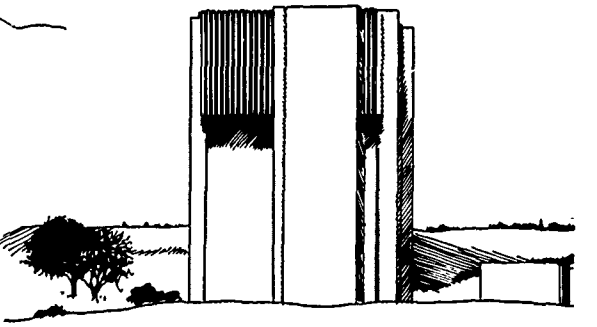
EXPERIENCE

Dounreay
CEMP were retained by the Islands Councils of the Shetland, Orkney and Western Isles to advise on the environmental implications of the United Kingdom Atomic Energy Authority and British Nuclear Fuels application to construct a fast reactor fuel reprocessing plant at Dounreay. CEMP assessed the Environmental Statement and led evidence on the environmental and economic impacts at the public inquiry.

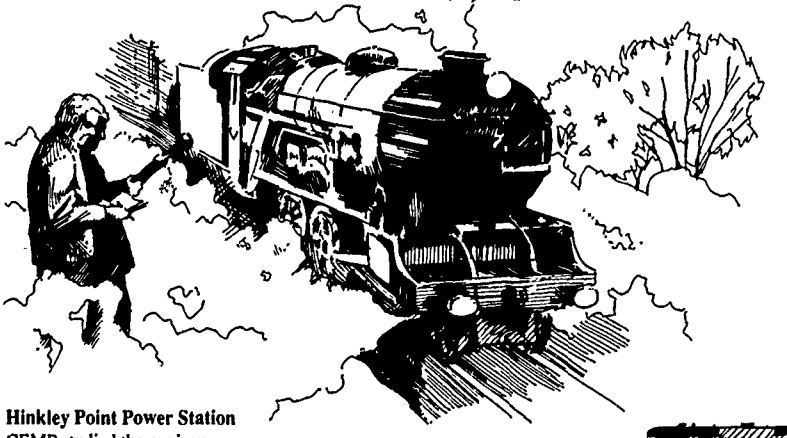




Dalyan Resort Complex
The proposed integrated tourism development in the coastal Koycegiz region of Mediterranean Turkey raised numerous sensitive environmental issues. CEMP undertook an assessment of the project and considered likely marine and terrestrial impacts with special consideration being given to the possible effects on turtle breeding.

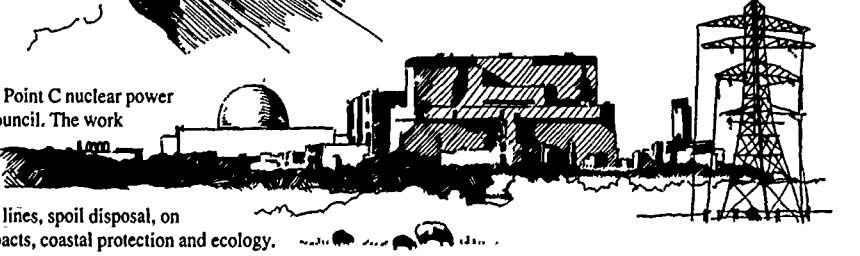


South Warwickshire Prospect
British Coal's Application for a deep shaft coal mine had significant environmental implications. CEMP advised Solihull Metropolitan Borough Council on the Environmental Assessment and British Coal's planning application.



Bure Valley Railway
Preparation of an environmental and economic assessment of the proposed Bure Valley Railway included predicting impacts of noise, dust, smoke and vibration during construction and operation.

Hinkley Point Power Station
CEMP studied the environmental implications of Hinkley Point C nuclear power station for Somerset County Council. The work included an overview of the application and providing specialist advice on landscape impacts including transmission lines, spoil disposal, on economic and employment impacts, coastal protection and ecology.



OUR CLIENTS

The Centre for Environmental Management and Planning has Clients from Industry, Government, Non-Governmental Organisations and the International Aid Agencies. Amongst CEMP's many recent clients for consultancy, research and training are: An Feras Forbartha, British Nuclear Fuels Limited, Berkshire County Council, Bharat Coking Coal Limited, Blue Circle Industries Plc, Botanical Survey of India, British Coal, British Council, British Gas, British Petroleum, British Agro-Chemical Association, Central Electricity Generating Board, Coal Contractors Limited, Commission of the European Communities, Confederation of British Industry, Conoco U.K.Ltd, Countryside Commission for Scotland, Department of the Environment, Department of Transport, Dunfermline District Council, Egyptian Environment Affairs Agency, Environment Canada, Forestry Commission, Indian Iron &Steel Co Ltd, Indian School of Mines, International Labour Office, Kuwait Institute for Scientific Research, Kuwait Ministry of Health, Kuwait National Industries Company, Leicester City Council, NATO, Nature Conservancy Council, Nirex Ltd, RTZ Ltd, Scottish Development Department, Scottish Wildlife Trust, Shell U.K. Exploration and Production Ltd, Sir Robert McAlpine & Sons Ltd, Solihull M.B.C., Somerset County Council, South Yorkshire County Council, Tarmac Roadstone Ltd, Taylor Woodrow Construction Ltd, Thomas Telford Ltd, United Nations Environment Programme, United Nations Development Programme, United Nations Economic Commission for Europe, Union Carbide, Wessex Water, World Health Organization.

CEMP works in the four corners of the world. Our Clients come from: Angola, Argentina, Australia, Austria, Bahrain, Bangladesh, Belgium, Belize, Brazil, Burma, Cameroon, Canada, Chile, Colombia, Costa Rica, Cyprus, Czechoslovakia, Denmark, Dominican Republic, Egypt, Ethiopia, Federal Republic of Germany, Finland France, The Gambia, German Democratic Republic, Ghana, Greece, Guam, Guatemala, Guyana, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Israel, Italy, Jamaica, Jordan, Kenya, Korea, Kuwait, Liberia, Luxembourg, Malagasy Republic, Malawi, Malaysia, Malta, Mauritius, Mexico, Monaco, Morocco, Nepal, Netherlands, Netherlands Antilles, New Zealand, Nigeria, Norway, Panama, Papua New Guinea, Philippines, Poland, Portugal, Puerto Rico, Qatar, Republic of China, Republic of Ireland, Saudi Arabia, Senegal, Sierra Leone, Somali Republic, Spain, Sri Lanka, Sudan, Sultanate of Oman, Swaziland, Sweden, Switzerland, Syria, Tanzania, Thailand, Tunisia, Turkey, United Kingdom, United States of America, Union of Soviet Socialist Republics, Uganda, United Arab Emirates, Venezuela, West Indies, Yugoslavia, Zaire, Zimbabwe.

For further information contact
Brian D Clark, Executive Director

Centre for Environmental Management and Planning

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Old Aberdeen,
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AB9 1FX
Scotland, U.K.
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Fax: 0224 487658
Telex: 73452 UNIABN G

ENVIRONMENTAL AUDIT THE KEY TO BETTER ENVIRONMENTAL PERFORMANCE

Growing regulatory and consumer pressures mean that firms are having to pay more attention to the environment and the effects their activities have on it. The need to achieve higher standards of environmental performance has not been greater, and firms need to plan now to avoid being left behind.

Giving insufficient weight to the environment can mean:

- incurring higher costs in, for example, waste disposal or remedial costs
- losing a competitive edge

Standards are getting tighter, enforcement tougher and the expectations of the public higher. Those companies that ignore these trends can risk a loss of business, the loss of public goodwill, even fines and other penalties.

Improving environmental performance is not a question of jumping on the green bandwagon - rather, it makes good business sense.

- costs can be saved by reducing or recycling wastes, including heat.
- production efficiency can be increased.
- accident losses and production losses can be reduced.
- lower insurance premiums can be negotiated.
- better relations with authorities and the public can be established, reducing the likelihood of delays or difficulties.

The key in improving environmental performance is through environmental audit. This will look at a firm's operations from raw materials to end products, from waste paper to waste heat and assess how they are affecting the environment. Where performance is high, measures to ensure it continues will be suggested, where it is low, the audit will recommend steps to improve it. The audit is independent and objective - it is not a policing exercise but a management tool. Its aim is to increase management security.

THE ENVIRONMENTAL AUDIT PROCESS

There are three steps towards better environmental performance.

STEP ONE

The first step is to decide, from an environmental standpoint, where the firm is, where it wants to be and what it will take to get there. A number of questions should be asked:

- do processes pose a threat to the environment?
- what impact are materials and products having on the environment?
- how safe is waste disposal?
- are current methods of pollution control and environmental management cost-effective?
- are there benefits or business opportunities in adopting alternative approaches to controlling environmental impacts (eg. utilisation of wastes)?

STEP TWO

The next step involves setting objectives. These may be:

- to reduce waste
- to improve pollution abatement
- to modify processes

The first objective should be to incorporate environmental considerations into the business plan. Some firms prepare a statement or policy on the environment. This may commit the firm to considering the environment as an integral element of its strategy, and provide the assurance that any threats to the environment from the firm's activities are identified and dealt with. The audit will consider the statement and check that:

- it is endorsed by the chief executive
- it is brought to the attention of all employees
- it is available to authorities and the public.

It will check that the statement is being followed, by looking at:

- the role that management play in ensuring that proper weight is given to environmental policy considerations in the firm
- the awareness of all employees about their individual responsibilities for carrying the policy through.

STEP THREE

The final step is concerned with implementing programmes for environmental improvement. These may include specific sector programmes such as:

- heat recovery
- waste reduction
- emission control

or may relate to improving systems and procedures, such as:

- emergency planning
- incident reporting
- maintenance
- employee training

The audit can identify the best expertise to consult in developing these programmes, or may even make recommendations itself. Either way, it will lay down a system to monitor the performance of programmes and ensure regular review of performance targets.

Three steps to environmental excellence. The challenge is not getting there, however, the real challenge is STAYING there.

If you feel your firm would benefit from an independent assessment of its environmental performance, or from some assistance in developing programmes to improve performance, contact CEMP. With over 15 years experience in environmental management and a track record in industry, CEMP can provide a range of services tailored to meet the individual needs of your firm.

For further information on CEMP's environmental auditing service, contact Matthew Davies, 48 College Bounds, Old Aberdeen, Aberdeen, AB9 1FX. Telephone 0224 272480, Fax 0224 487658, Telex 73458 UNIABN G.

APPENDIX VI

CURRICULA VITAE

Resume

BRIAN DRUMMOND CLARK

PROFILE

Brian Clark is an internationally renowned expert on environmental impact assessment (EIA), with seventeen years' experience in environmental management in the UK, Europe and overseas. As an advisor and consultant on environmental issues - specifically EIA - for the Department of the Environment, the House of Lords, the Scottish Office, the Welsh Office, the United Nations Environment Programme, the World Health Orga. ization and the UN Economic Commission for Europe, Brian was honoured by the Global 500 Award from UNEP in 1987 for his services towards environmental management.

RELEVANT EXPERIENCE

Consultancy and research projects
(a few recent examples)

1988	*Hinkley Point power station*: a major UK project involving a review of the environmental assessment of the proposed Pressurised Water Reactor for Hinkley Point submitted by the Central Electricity Generating Board to Somerset County Council.
1987	*Proposed Dalyan resort complex*: environmental assessment of the effects of the development of a major tourist complex at Dalyan, a sensitive coastal location in Turkey. Special consideration was given to possible effects on turtle breeding grounds.
1987	*Guidelines on environmental assessment*: involved the preparation of guidelines for undertaking environmental assessments of both onshore and offshore operations, for BP Petroleum Development Limited.
1986 - 1988	*South Warwickshire prospect*: CEMP advised Solihull Metropolitan Borough Council on British Coal's proposals to locate a new deep draft coalmine on the outskirts of Solihull, in relation to the completeness and accuracy of British Coal's environmental assessment.
1985	*Nuclear fuel reprocessing* : a major contract to advise the Shetland and Western Islands Councils (principal objectors) on radioactive waste management from the proposed European Demonstration Fast Reactor Fuel Reprocessing Plant (EDRP).
1984	*Study of the implications of the EEC Directive on EIA for oil and gas developments in Scotland*: sponsored by an informal working group comprising industry and government. The results of the study published by CEMP in 1984.
1982-1986	*Environmental assessment for North Sea Installations* : critical reviews for a major oil company of a number of EIAs and audits produced for offshore and onshore installations.

Conferences and training

1979-1989	Course Director for ten international seminars on environmental impact assessment organised annually by CEMP, and sponsored by the World Health Organization, UNEP and the International Maritime Organization.
1986-1989	Course Director and lecturer at three month intensive training courses on Environmental Impact Assessment held at Aberdeen University.
	Course Director for International Conferences on Environmental Management and Impact Assessment in France (1981) and Crete (1983 and 1988)

Other courses include:

Advanced Policy Workshop, Environmental Management and Impact Assessment: Implementation Requirements, Crete 1988
Risk Assessment for Developing Countries, India 1985
Environmental Diplomacy, Ireland 1985
EIA and Land-Use Planning, Hong Kong 1984
Sound Environmental Strategies for the Mining and Energy Industries, Crete 1984

Achievements as an international consultant:

Consultant and Co-ordinator of WHO (Geneva) and UNEP (Regional Seas) on Production of Training Manuals on EIA, 1980-1981 and for WHO training package on "Rapid Pollution Assessment and EIA", 1983.

Advisor to House of Lords European Environmental Committee on EIA.

Consultant to WHO (Europe and SEARO) advising on EIA in Poland, Greece, Turkey, Czechoslovakia and India.

Director of research team on post-development audits of EIA prediction methods and techniques, sponsored by NERC.

Member of Royal Town Planning Institute Working Party on EIA.

EMPLOYMENT

Executive Director, Centre for Environmental Management and Planning (CEMP) (1983 - present)

Project Director of CEMP (1973 - 1983)

Senior Lecturer, Department of Geography, University of Aberdeen (1971 - present)

QUALIFICATIONS

BA (First Class) Geography, University of Liverpool 1960
MA Geography, University of Liverpool 1962

PERSONAL

Born 1938; British; Married with three children.

Resume

AMANDA CHISHOLM

PROFILE

Amanda is an environmental scientist, specialising in environmental impact assessment and information and policy analysis, particularly with respect to pollution control and water management. Having carried out policy review and analysis studies for Alberta Environment, Canada, Amanda is experienced in working with interdisciplinary problem-solving teams. Originally trained as a biologist, her experience in Canada also includes an environmental audit of a coal-fired power station for the Energy Resources Conservation Board, Calgary, and a strategic plan for a native Indian non-governmental organisation.

RELEVANT EXPERIENCE

1989	Development of a training programme to increase employee awareness of their environmental responsibilities for Shell UK.
1989	Coopers and Lybrand Associates. Member of team conducting economic and environmental studies for the Scottish Development Agency.
1987	Member of team with Praxis (a social planning company) conducting housing surveys of Banff, Alberta, Canada. Responsible for the compilation of data and subsequent analysis.
1986	Alberta Environment. Responsible for conducting a policy review and analysis to determine the extent to which public participation in resources management is institutionalised in legislation and/or policy. Report prepared.
1985	Provided technical support in electron microscopy as a research technician at the University of Calgary Medical School, Alberta, Canada.
1980 - 1983	Member of a research team in biochemistry, working on a project on insulin and diabetes. Three papers published.

QUALIFICATIONS

Master of Environmental Design (M.E.Des.)
Environmental Science, University of Calgary, 1984-88

B.Sc. Honours, Biology, University of Sussex, 1976-79

PERSONAL

Born: 1958 British/Canadian Single